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Fort William
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Montana Army
National Guard

Final Draft
Enviromental Assessment

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Fort William Henry Harrison
Montana Army National Guard
March 1998

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LEAD AGENCY, ABSTRACT, AND SIGNATURE PAGE

LEAD AGENCY: DEPARTMENT OF THE ARMY. U.S. ARMY NATIONAL GUARD BUREAU

COOPERATING AGENCIES: NONE

TITLE OF PROPOSED ACTION: Various Projects, Fort William Henry Harrison, Helena, Montana

AFFECTED JURISDICTION: Montana, USA

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PROPONENTS: Army National Guard Bureau and Montana Army National Guard

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DOCUMENT DESIGNATION: Environmental Assessment

ABSTRACT:

The Department of the Army, National Guard Bureau, proposes to continue the use of Fort William Henry Harrison, Montana for military training purposes. This Environmental Assessment addresses 18 separate construction and site development projects that are being contemplated at Fort Harrison over the next 10 year time period. These projects are necessary to maintain the proficiency levels of the military units training at this facility to ensure compliance with their Guard mission in the event of a State or Federal emergency.

This Environmental Assessment evaluates the individual and cumulative effects of the Proposed Action(s), the Alternative Action(s) and the No Action Alternative(s) with respect to a variety of criteria established by the Army National Guard, including the Geographic Setting and Land Use, Aesthetics, Air Quality, Noise, Geology and Soils, Biological Resources, Cultural Resources, Socioeconomic Environment, Infrastructure and Hazardous and Toxic Materials/Wastes.

The evaluation performed as the work product of this EA concludes that there will be no significant impact, either individually or cumulatively, to the local environment or quality of life as a result of the Proposed Action(s).

DATE DUE

FINDING OF NO SIGNIFICANT IMPACT (FNSI) - *DRAFT*

INTRODUCTION

This Finding of No Significant Impact (FNSI) documents the conclusions resulting from the preparation of an Environmental Assessment (EA) for the proposed expansion of administrative and training facilities for the Montana Army National Guard(MT ARNG), Montana Army Reserve and Montana Naval Reserve at Fort Harrison, Montana over the next 10 year time period. The EA and this FNSI have been prepared in accordance with the National Environmental Policy Act of 1969, Council on Environmental Quality regulations, and Army Regulation 200-2.

PROPOSED ACTION

The MT ARNG, under the direction of the Federal National Guard Bureau, is considering a series of projects over the next 10 year time period at the Fort Harrison complex that will support and expand the training opportunities provided at that site.

Because of the number of projects involved in this EA, the individual projects have been classified according to use and assigned to 'Action Groups' for the purpose of review and analysis. Individual projects within each Action Group are complementary in both their intended use and anticipated affect on the environment. A brief description of each Action Group follows:

- **Action Group 1** includes 7 projects, 6 of which will provide storage and support space for existing activities on the base that are currently unhoused or are housed in temporary buildings. The 7th project is a new Wash Rack that will serve the entire Base.
- **Action Group 2** includes 4 projects that will house existing administrative and training facilities that are currently located in either temporary facilities elsewhere on site or at off site locations.
- **Action Group 3** includes 3 projects that deal with replacement, upgrade and expansion to the existing firing ranges and ammunition bunkers.
- **Action Group 4** includes 4 projects deal with a variety of improvements on the Base related to site development and do not deal with the construction of physical structures.

ANTICIPATED ENVIRONMENTAL AFFECTS

LOCATION: The projects are all located on or in the immediate Fort Harrison area.

LAND USE: The Proposed Action(s) are complementary to existing activities which have no adverse impacts on land use or sensitive receptors adjacent to Fort Harrison and thus would have an insignificant impact on adjacent land use.

AESTHETICS AND VISUAL RESOURCES: The Proposed Action(s) will have a slight beneficial impact on the aesthetics and visual resources of the area as several vacant, rundown buildings will be removed from the site and replaced with new modern buildings more in character with the long term aesthetic goals of the Base.

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FINDING OF NO SIGNIFICANT IMPACT (FNSI) - *DRAFT*

AIR QUALITY: Direct air quality impacts will occur as a result of construction (excavation, grading, paving, and traffic) and operational activities (refueling, facility operations, and aircraft).

Air quality impacts during construction could be potentially significant. However, the emission levels from construction operations and vehicles can be mitigated by the contractor and thus reduce the short-term impact to acceptable levels.

The existing MT ARNG activities and use of the training areas have minimal impacts on air quality in the Helena area. No long-term operational impacts to air quality would occur from the Proposed Action(s).

NOISE: Noise generated during the construction of the facilities reviewed under this EA will cause insignificant temporary impacts to local sensitive receptors. Existing operational noise, including that at the outdoor small arms and M-16 training areas, have created no documented adverse impacts. Because the Proposed Action(s) are complementary and in support of existing uses, short-term or long-term impacts are considered to be insignificant.

GEOLOGY AND SOILS: Adverse, but insignificant, impacts to Geological Resources will result due to the construction of the projects reviewed in this EA. These impacts will be caused by site preparation, including the removal of vegetation, and the excavation and stockpiling of topsoil and organic matter. Indirect impacts from wind and water erosion will also occur. Mitigation measures will be required during the construction period(s) to ensure the short-term impacts are minimized and long-term impacts are avoided. Impacts from operations, given the implementation of appropriate long-term mitigation efforts during construction, will be insignificant.

WATER RESOURCES: No significant impacts to Water Resources will occur as a result of the construction of the projects reviewed in this EA. There are 3 primary criteria for evaluating the impact on Water Resources; groundwater, surface water and water quality. Because of the shallow nature of the construction projects and the depth of groundwater in the area, groundwater will not be significantly impacted by construction of the projects in this EA. The overall intent of the projects, and specifically projects 1F which provides a new 'contained' Wash Rack facility and project 4A which provides for the channelization of storm water runoff through the base, will provide a positive beneficial impact on surface water in the area, and downstream. Because domestic water is obtained from the City via an underground distribution system that will not be effected, there will be no impact on the water quality at the Base.

BIOLOGICAL RESOURCES: Impacts to biological resources from existing activities on Fort Harrison are insignificant and result primarily from foot and vehicular traffic, bivouacs, occasional helicopter flyovers, and noxious weed control. However, these activities do not lead to degradation of critical habitat or risk the viability of threatened or endangered flora or fauna.

Proposed construction activities will disturb limited and specific areas of common grassland an domestic vegetation or areas previously disturbed by military activities or construction projects. These activities will not lead to degradation of important habitat, or loss of aquatic resources, or risk the viability of threatened or endangered flora and fauna.

FINDING OF NO SIGNIFICANT IMPACT (FNSI) - *DRAFT*

CULTURAL RESOURCES: Proposed construction activities will impact the cultural resources at Fort Harrison. The impact will result from the required demolition of several existing buildings that have varying degrees of historical significance, at this point not yet determined. Discussions are ongoing with the State Historical Preservation Office(SHPO) and a plan is in place to limit the impact by utilizing mitigation measures specifically adopted for each building prior to the occurrence of any demolition activities. With the continued guidance of SHPO and implementation of the resulting mitigation plan, the overall impact will be insignificant.

SOCIOECONOMIC ENVIRONMENT: As a result of the Proposed Action(s), impacts to socioeconomic resources in the region of influence (Lewis and Clark County) are expected to be negligible, except for a beneficial impact to the local economy from the construction expenditures and some limited additional full time employment.

INFRASTRUCUTURE: With the exception of water and sewer, the existing infrastructure systems are capable of supporting the proposed expansion of facilities at Fort Harrison. The existing water system is capable of supporting this expansion, but the distribution system is in need of upgrade regardless of the final disposition of these projects. Both the water and sewer systems are currently being evaluated and the Base Utility System Masterplan updated. Necessary modifications to both the water and sewer systems, including any infrastructure improvements necessary for these projects, will be implemented based on the results of those studies.

HAZARDOUS AND TOXIC MATERIAL/WASTES: Ongoing MT ARNG operations have insignificant impacts on hazardous materials and waste management. Based on MT ARNG pollution prevention efforts, there may actually be lesser amounts of hazardous materials used or wastes (solid, hazardous, and water) generated as the projects reviewed in this EA are implemented. No significant impacts to environmental programs are projected for implementing the projects in this EA.

FINDING OF NO SIGNFICIANT IMPACT (FNSI)

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act of 1969, as amended, and Army Regulation 200-2, an assessment of identified environmental effects has been prepared for a variety of improvements and upgrades to the Fort Harrison complex located near Helena, Montana. The determination has been made that the action will have no significant impact on the quality of the human environment. Thus, an environmental impact statement is not warranted.

Copies of the final document are now available for public review and comment. Copies can be obtained at: the Lewis and Clark Library and the State Library, both located in Helena, Montana. Comments on this document should be directed to: CTA Architects Engineers, 1500 Poly Drive, Billings, MT 59102. For further information contact Jim Wertman at 406.248.7455.

Date

Michael J. Squier
Colonel, GS
Acting Deputy Director, Army National Guard

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SECTION 1

SECTION 1.0: PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The MT ARNG is charged with meeting the mandate of the Constitutions of both the United States and Montana. This is performed by providing emergency support to civil authorities as directed by the Governor, providing support to the community as approved by proper authority, and providing mission-ready forces to the Federal Government as directed by the President.

Fort Harrison is one of the primary training sites in Montana for the Army National Guard and several other military reserve units. In order to provide the basic and specialized training to these units so that they are prepared to fulfill their mission(s), the facilities and opportunities for training at Fort Harrison must be continually upgraded and improved as the training methods and technology evolve.

The United States is considering a series of projects at the Montana Army National Guard (MT ARNG) installation at Fort Harrison, Montana over the next 10 year period. Agencies involved in this action include the Montana Army National Guard, the US Army Reserve and the US Naval Reserve.

The projects are varied in size and scope and are all located within the boundaries of the existing federal property on the Fort Harrison site. The projects contained in this EA are all individual components of the overall scheduled upgrade of the services provided at Fort Harrison that complement the existing mission of the MT ARNG and the other military units that are supported by this facility.

The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in their decision-making process. The President's Council on Environmental Quality (CEQ) issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental analysis.

The Environmental Impact Analysis Process is governed by Army Regulation 200-2, *Environmental Effects of Army Actions*, and is the mechanism by which the Army assures it's decisions include an understanding of potential environmental consequences. The CEQ regulations are used in conjunction with Army Regulation 200-2 to determine the appropriate documentation with regard to the level of environmental analysis.

1.2 PURPOSE AND NEED

Fort Harrison serves as the focal point and staging area for the majority of current Army National Guard training in Montana. Fort Harrison's mission is to provide training areas and facilities for the Army National Guard and, based on availability, other military units such as the Army Reserve and active duty military. Fort Harrison contains a cantonment area with billeting, messing, latrine facilities, and site support operations, ranges for small arms qualification, a drop zone, and a helicopter landing area.

Fort Harrison is classified as a Collective Training Area (CTA). CTAs are designed to support individual and collective training up to battalion level. CTAs include small arm ranges, cantonment facilities, and maneuver areas. In addition to the above military personnel, the ranges and training areas are also utilized by the local law enforcement agencies, fire department, and various other state and federal agencies.

Because of the number of projects involved in this EA, individual projects have been classified according to use and assigned to 'Action Groups'. Individual projects within each Action Group are complementary to the others in both their intended use and anticipated affect on the environment.

A brief description of each Action Group follows:

- **Action Group 1** will provide storage and support space for existing activities on the base that are currently unhoused or are housed in temporary buildings.
- **Action Group 2** includes projects that will house existing administrative and training facilities that are currently located in either temporary facilities elsewhere on site or at off site locations.
- **Action Group 3** projects deal with replacement, upgrade and expansion to the existing firing ranges and ammunition bunkers.
- **Action Group 4** projects deal with a variety of improvements on the Base related to site development and do not deal with the construction of physical structures.

1.3 SCOPE OF THE DOCUMENT

This Environmental Assessment (EA), is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council of Environmental Quality Regulations, and Army Regulation 200-2 to evaluate the cumulative impact of the proposed Base wide modifications and facility improvements and resulting construction activities. The scope of the EA addresses potential impacts to the biological, physical, and human environs of the project area from proposed construction and related activities.

To assist in identifying potential significant issues, Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) was conducted with Federal, State, county and local agencies. Identification of potential issues was also coordinated with representatives from the MT ARNG. Based on input received directly related to this project and from a review of impacts from similar ARNG and Army activities, specific areas of potential concern were identified and are addressed in the final EA document.

A Preliminary Assessment for hazardous materials and a follow up Site Inspection Field Work Plan for the Fort Harrison area have been completed by the MT ARNG. No environmental hazards were identified on any of the properties involved in this EA. The previous environmental/hazardous materials studies and the Site Inspection Field Work Plan are available for review at the MT ARNG Environmental Office.

SECTION 2

SECTION 2.0: DESCRIPTION OF THE PROPOSED ACTION

2.1 PROJECT(S) DESCRIPTION

The United States is proposing to upgrade and expand the existing MT ARNG facility at Fort Harrison, Montana over the next 10 year period. Eighteen separate projects have been identified that may be implemented by the MT ARNG(16), the US Army Reserve(1) and the US Navy Reserves/Seabees(1) at this site.

This EA involves an overall review of the cumulative environmental consequences of the 18 separate projects. Proposed locations for all 18 projects are shown on the site drawing included in Appendix B.

Because of the number of projects contained in this EA and the variety of uses, the projects were organized into 4 separate groups with similar use and characteristics. The groups, referred to as 'Action Groups', along with a brief description of the Proposed Action for each project are listed below.

2.1.1 ACTION GROUP 1 - Storage And Support Facilities

These facilities are made up of a series of storage and related facilities required to support the current mission(s) of the existing Guard units utilizing the Fort Harrison complex. These projects are in support of the existing mission and do not involve the addition of any personnel to the installation. Projects in this grouping and the Proposed Action include:

1A USPFO Warehouse- construct an indoor heated warehouse space for the USPFO. This space will replace space in a current facility that no longer meets the needs of the USPFO. Two alternative locations are being considered. One at the secondary Base entrance provides easy and convenient access for over the road deliveries. The second location is closer to the existing railroad spur line on the Base and would provide better access for railway deliveries.

1B CSMS Cold Storage Warehouse- construct a cold storage warehouse in support of the Combined Support Maintenance Shop to house existing equipment and materials that are currently stored outside. Because of the support nature of this facility and need for security, the Proposed Action calls for the structure to be housed in the existing CSMS fenced yard area.

1C Organizational Maintenance Shop #3 Cold Storage Warehouse- construct a cold storage warehouse in support of the OMS #3 to house existing equipment and materials that are currently stored outside. Because of the support nature of this facility and the need for security, the Proposed Action calls for the structure to be housed in the existing OMS #3 fenced yard area.

1D Mini Storage Warehouse- construct a series of indoor cold storage units for temporary storage of MTOE and CTA equipment from outlying units that utilize Fort Harrison on a reoccurring basis.

1E Battalion Maintenance Shelter- construct an outdoor covered area for unheated vehicle maintenance that will be utilized by off site military units involved in training at the Base.

2.1.1 ACTION GROUP 1 - Storage And Support Facilities/Continued

1F Wash Rack- construct a facility that will provide a contained area for cleaning Guard vehicles that are used in the remote training sites. Vehicles need to be cleaned prior to providing maintenance or parking in the storage yards. Currently this function is performed in front of the UTES building and other locations on Base. This facility will provide a central location for this function where the washing process and discharge of waste water can be controlled. The location will be immediately adjacent to the UTES facility and UTES storage yard for ease of access.

1G USAR Cold Storage Building - construct a cold storage warehouse support facility for the US Army Reserve. Because of the support nature of this facility and the need for security, the Proposed Action calls for the structure to be housed in the existing USAR compound fenced yard area.

2.1.2 ACTION GROUP 2 - Training/Administrative Facilities

These facilities are more technical in nature and involve the construction of administrative support and training facilities. Unless noted otherwise, these projects are in support of the existing mission and do not involve the addition of any personnel to the Base. Projects in this grouping and the Proposed Action include:

2A Simulation Center- construct a building that will provide a centralized location for existing and future simulation equipment at Fort Harrison. Currently the equipment is located at several locations on Base. The Simulation Center will be in support of the current mission of the MT ARNG. The building will be located adjacent to the existing portable Tank Simulation Unit and near the majority of other classroom training areas.

2B MILES/TASC Building- construct a building that will replace the existing MILES/TASC facility that is being temporarily housed in building P64. This building will be located adjacent to the new Battalion Support Center for ease of access by personnel at that facility.

2C Helena Armed Forces Reserve Center- construct a facility that will provide administrative space for approximately 150 full time MT ARNG employees currently housed on site in temporary quarters(50 employees) or in the Reserve Center in Helena(100 employees). This building will be located on the south end of the site to allow easy access to the facility by off-site personnel.

2D Naval Reserve Center- construct a 17,000 SF building that will provide a replacement facility for the Naval Reserve group currently housed in Missoula, Great Falls and Billings. It is being located on the southwest corner of the site, away from the majority of the MT ARNG facilities and with easy access the main Base entry. Approximately 7-8 full time Naval Reserve personnel will use the facility on a daily basis. The remainder of the use will be for training purposes on week-ends throughout the year by the 226 drilling reservists.

2.1.3 ACTION GROUP 3 - Firing Range Facilities

These projects deal with the upgrade and expansion of the firing ranges for both small arms and M16 and the replacement of outdated ammunition bunkers. All projects in this group are located in the range area southwest of the main cantonment area. Projects in this grouping and the Proposed Action include:

3A Ammunition Bunkers- there are currently 7 ammunition bunkers on site at Fort Harrison. This project will replace the 3 wooden structures with new state-of-the-art concrete structures more suitable for housing current ordinance. The new structures will be located in the same location as the ones being removed.

3B Pistol Range Upgrade & Expansion- this project will modify the orientation of the existing range and expand the firing positions from the current 8 to 30. This project is a follow-up to an earlier land acquisition that was specifically executed for this and project 3C. This is a non-standard range based on the United States Army Training and Doctrine Command(TRADOC) due to the unique training needs of Fort Harrison and the range site specific arrangement. (MT ARNG/Reynolds, 1998)

3C M16 Rifle Range Upgrade- this project will upgrade the existing M16 Range to current standards. Firing positions and orientation will remain the same. This project is a follow-up to an earlier land acquisition that was specifically executed for this project.

2.1.4 ACTION GROUP 4 - Site Development Projects

These projects are primarily maintenance oriented, focusing on correcting existing site related deficiencies. Projects in this grouping and the Proposed Action include:

4A UTES/CSMS Water Diversion Project- over the years, as development has proceeded at the Base, surface water run off and resulting erosion has become a problem, particularly through the UTES/CSMS sites and to the east through the Base. This project will provide for a series of drainage channels to collect and divert current surface run off to the north of the UTES/CSMS yards and intersect with an existing drainage channel in that area that carries surface water to the northeast. The primary goal of this project is to limit or prevent erosion and reduce the ongoing maintenance caused by the current conditions.

4B Concrete UTES Compound- this project will provide for hard surface paving of the circulation areas in the existing equipment storage yard at the UTES compound. This project will not change the existing use of the yard but will enhance the use and limit ongoing damage created by the existing tracked vehicles using the yard.

4C Main Base Entry Upgrades- this project will provide for a more formal, landscaped entry area for the two existing entries to Fort Harrison.

4D Helicopter Landing Pad- this project will provide a landing pad near the existing Medical Unit Training Facility for helicopter use in transporting personnel from that facility and other incidental administrative and training uses.

2.2 ISSUES

2.2.1 Building Demolition

Projects 1A, 1D, 1E, 2B & 3A will involve the demolition of existing buildings as follows:

- 1A: Site 1, Buildings T517, T519 & T520; Site 2, Buildings T503, T504, T505, T506
- 1D: T211, T212, T502
- 1E: T502A
- 2B: T509, T525, T526
- 3A: Existing wooden ammo bunkers - 3

A Base wide Cultural Resources Management Plan(CRMP) was previously prepared for Fort Harrison and approved in September of 1995. That document was revised and updated in April of 1997. That document is available for review at the Base Environmental Office.

One of the goals of the CRMP is to assure compliance with Section 106 of the National Historic Preservation Act of 1966 . The CRMP outlines the procedures that must be completed prior to removal of any existing facility on Base that may be eligible for listing on the National Historic Register(NHR).

Coordination with the State Historic Preservation Office(SHPO) specific to the projects in this EA has taken place, both at the timing of the IICEP at the beginning of the development of the EA and subsequent to the publication of the Draft EA. See pertinent correspondence in Appendix A. The contact at the SHPO for this project is Josef Warhank at 406-444-0388.

It is SHPO's recommendation that as follow-up to this EA, and prior to the implementation of any of the projects that affect existing buildings, MT ARNG representatives review the status of all affected buildings to determine if they are considered eligible for listing on the NHR. That information will then be transmitted to the SHPO for concurrence. With the exception of T517, T502A & T526, all of the above noted buildings have previously been cleared by the Base Historic Preservation Plan(HPP) Committee for demolition.

Those deemed not eligible can be removed from the site without further action. For those buildings that are deemed eligible for listing on the NHR, the MT ARNG and SHPO will develop a Memorandum of Agreement on a project by project basis to provide adequate mitigation measures prior to demolition.(Warhank/SHPO, 1998)

Mitigation measures will include items such as development of floor plans and elevation drawings, photographs, research and documentation of the context of the building(s). These mitigation measures will then be collected and published to provide a permanent record for each designated building.

Beyond the historical significance of the buildings, the impact of the physical act of demolishing these buildings also needs to be considered. Each building to be removed will create short term impacts on air quality(dust during demolition, backfilling and grading operations), noise levels(demolition equipment), storm drainage and related environmental concerns.

2.2.2 Hazardous Materials

A Preliminary Assessment for hazardous materials and a follow up Site Inspection Field Work Plan for the Fort Harrison area have been completed by the MT ARNG. No environmental hazards were identified on any of the properties involved in this EA. The previous environmental/hazardous materials studies and the Site Inspection Field Work Plan are available for review in the MT ARNG Environmental Office.

2.2.3 Traffic

With the exception of projects 2B/Helena Armed Forces Reserve Center and 2D/Naval Reserve Center, all projects are in support of the existing mission and functions currently located on Base. As such, no additional traffic is expected to be generated by those facilities.

Project 2B/Helena AFRC will relocate approximately 100 personnel from the Army National Guard Headquarters and Army Reserve Center in Helena to Fort Harrison and will thus create additional traffic at the Base. The remainder of the personnel using this facility, approximately 50, are currently in other locations on Base.

Project 2D/Naval Reserve Center will relocate the personnel currently using the existing Naval Reserve Centers that are being closed in Billings, Missoula and Great Falls and will also create additional traffic. Current information indicates approximately 7-8 full time administrative positions will be created by this action. 226 drilling reservists will use the facility for training on week-ends during the year.

A Traffic/Pavement Evaluation of the Fort Harrison site and surrounding area was performed as part of this EA by Damschen & Associates, a local civil engineering consulting firm. The basis for that evaluation was the creation of approximately 150 additional 'positions' on the Base, currently not there. This study includes a review of the existing traffic circulation, access to arterials, emergency service access, existing pavement conditions, traffic generation from the proposed facilities, highway capacity, impacts to existing pavements and impacts to signalization, signage and pavement delineation.

The results of the study indicate that the impacts of the additional traffic will not have any significant impact on the traffic or roadways in this area. A complete copy of the study is included in Appendix E.

2.2.4 Storm Water Discharge

Construction activities included in this EA will disturb significant land areas during construction, specifically the firing range work. Discharge permits for this and other work that disturb more than 5 acres will have to be coordinated with the State Water Protection Bureau(Lincoln/MT DEQ, 1997). Although permits will not be acquired as part of the EA process, each action requiring a permit has been identified below and will have to obtain the necessary permits:

- 1A/USPFO Warehouse - potentially
- 2C/Helena Armed Forces Reserve Center
- 3B/Pistol Range Upgrade & Expansion
- 3C/M16 Rifle Range Upgrade
- 4A/UTES/CSMS Water Diversion Project

2.2.5 Biological Resources

Information generated in a previous Environmental Assessment Report for Land Acquisition at Fort Harrison dated January 1997 indicates that there are no sensitive or listed species (plant or animal) in the Fort Harrison area (reference Appendix D of that document, letter from Albert Harting, Consulting Wildlife Biologist to Major Steve Martinka).

There is a small prairie dog population on base, near the main entry. The MT ARNG is currently preparing a separate EA that will assess the appropriate management of that colony.

2.2.6 Site Utilities - Water And Sewer

As a result of comments received from the Veteran's Administration Medical and Regional Office Center(VAMROC), the MT ARNG has initiated separate studies of the water and sewer systems currently being provided to the Base. This information will supplement the information in the 1987 Utility System Masterplan for the Base.

SECTION 3

SECTION 3.0: ALTERNATIVES DEVELOPMENT

3.1 ALTERNATIVE DEVELOPMENT

The CEQ regulations for evaluation of major Federal projects and actions require an investigation and evaluation of reasonable alternatives to the Proposed Action as part of each environmental study. According to the MEPA Handbook Glossary, a reasonable alternative is one that is realistic, technologically available and bears a logical relationship to the proposal being evaluated.

Using the above as a basis, the MT ARNG analyzed options for each project in an effort to satisfy the long-term needs of the MT ARNG in the most cost-effective manner while minimizing potential adverse environmental impacts. Of those that were reviewed, the highest ranking option is being presented in this EA as the 'Proposed Action' and generally the next highest rated is being reviewed in this EA as the 'Alternative Action'.

There are certain projects included in the scope of this EA where an Alternative Action is not appropriate. An example is the proposed upgrade of the existing main Base entry- in that specific case, there is no logical Alternative Action as there is no desire to move the entry, simply upgrade the landscaping and provide more unified signage. A discussion is included for each project where an Alternative Action is not appropriate.

3.2 NO ACTION ALTERNATIVE

The No Action Alternative would forego the construction and continued development at this site and would rely on the existing facilities to support future military training for the National Guard, or construct the facilities at another location. Construction of the new facilities on remote sites still does not address the current deficiencies at this site such as the outdated ammunition bunkers, undersized firing ranges, lack of storage, erosion caused by storm water runoff and others.

For those and other specific reasons outlined below, the No Action Alternative does not represent the best interests of the MT ARNG as it does not allow the Montana National Guard units utilizing this facility to obtain the type and quality of training that will allow them to fulfill their primary mission safely and efficiently. However, the No Action Alternative is included in this EA to provide baseline conditions for comparison.

3.3 PROJECT ALTERNATIVE SUMMARY

Because of the number of projects being reviewed in this EA, a summary of each project is provided below that includes a restatement of the Proposed Action from Section 2 and provides narratives describing both the Alternative Action that was considered and the No Action Alternative.

3.3.1 Action Group 1

The focus of this group of projects is to provide covered indoor storage areas for equipment and supplies. As presented, the **Proposed Action** is the preferred alternative to development of these facilities as this option allows the construction to occur adjacent to the existing source of the equipment and supplies and thus is the least impactive on operational and security requirements. If there is no adjacent use, such as in the case of storage facilities being provided for off site units using the Base for temporary training, the facility is placed in the most logical location on Base to allow the most efficient use of land and create the least disruption to existing traffic flow.

For all projects in this grouping, the **Alternative Action** calls for the construction of a common warehouse facility in a centralized location that would accommodate the needs of all projects in Action Group 1. The location that was selected is the open area east of the new Battalion Support Center, north of Sananandra Drive. It was felt that this option would provide the benefits of consolidation of operational requirements and traffic into a single location. The downside of this alternative is that the projects probably will not be funded at the same time and thus any efficiencies in construction cost will not be realized. Also, as the different components are funded over the next ten years, continued construction in the area will be disruptive to existing operations that were constructed earlier. This option will also create quite of bit of additional traffic on Base roads that would not occur if the buildings were dispersed and constructed as noted in the Proposed Action. Traffic congestion at the common facility may also be a problem.

The **No Action Alternative** would maintain the status quo, with this equipment and material being stored outdoors, exposed to the weather which accelerates the aging process and ultimately results in additional maintenance and a shorter life span. Due to increased Federal budget cutbacks, both of these resulting conditions are unacceptable.

1A - USPFO WAREHOUSE

Proposed Action
The proposed action would result in the construction of a new USPFO Warehouse facility at one of two selected locations on the Base. The final location would be based on the timing of the project and the primary method of delivery being utilized at that time. If the majority of the deliveries are via over-the-road trucks, the location closer to the secondary entrance gate will be preferred. If the majority of the deliveries are via rail, the location closer to the existing rail spur will be preferred.

Alternative Action
The Alternative Action will be to construct this facility as part of a new centralized warehouse facility that will incorporate the individual storage and warehousing needs of all Base activities.

No Action Alternative
This alternative foregoes construction of a new warehouse and relies upon the capability of the existing USPFO warehouse to accommodate the future needs of the Guard at this site.

1B - CSMS COLD STORAGE WAREHOUSE

Proposed Action
The proposed action would result in the construction of a new warehouse at the existing Combined Support Maintenance Shop to allow for the housing of existing materials and vehicles that are currently stored outdoors. For operational purposes, the location of the building will be adjacent to the existing CSMS facility. For security purposes, access to the building would be through the existing CSMS fenced storage yard.

Alternative Action
As an alternative to constructing this facility at the CSMS yard area, a new combined storage warehouse for all Guard uses at Fort Harrison was considered - see above 'Alternative Action' discussion. This alternative would combine the uses of projects 1A, 1B, 1C, 1D, 1E, 1F and 1G into one centralized warehouse facility.

No Action Alternative
This alternative foregoes construction of a new warehouse and continues to store the existing materials and equipment outdoors without cover.

1C - OMS #3 COLD STORAGE WAREHOUSE

Proposed Action
The proposed action would result in the construction of a new warehouse at the existing Organizational Maintenance Shop to allow for the housing of existing materials and vehicles that are currently stored outdoors. For operational purposes, the location of the building will be adjacent to the existing OMS #3 facility. For security purposes, access to the building would be through the existing OMS #3 fenced storage yard.

Alternative Action
As an alternative to constructing this facility at the OMS #3 yard area, a new combined storage warehouse for all Guard uses at Fort Harrison was considered - see above 'Alternative Action' discussion. This alternative would combine the uses of projects 1A, 1B, 1C, 1D, 1E, 1F and 1G into one centralized warehouse facility.

No Action Alternative
This alternative foregoes construction of a new warehouse and continues to store the existing materials and equipment outdoors without cover.

1D - MINI STORAGE WAREHOUSE

Proposed Action

The proposed action would result in the construction of a new mini storage warehouse to allow for the housing of MTOE and CTA equipment from outlying units that utilize Fort Harrison on a reoccurring basis. Currently this equipment is not stored on site and has to be transported for each training use. The location of this facility would be just to the north of Sananandrah Drive and west of Kiska Street. This location allows ease of access for the off site units via the secondary Base entry and adjacency to the new Battalion Support Center.

Alternative Action

As an alternative to constructing this facility at the location noted, a new combined storage warehouse for all Guard uses at Fort Harrison was considered - see above 'Alternative Action' discussion. This alternative would combine the uses of projects 1A, 1B, 1C, 1D, 1E, 1F and 1G into one centralized warehouse facility.

No Action Alternative

This alternative foregoes construction of a new warehouse and requires that the Guard units continue to transport the equipment to the site each time they use the facility for training purposes.

1E - BATTALION MAINTENANCE SHELTER

Proposed Action

The proposed action would result in the construction of a new unheated shelter to allow for the maintenance of off site equipment from outlying units that utilize Fort Harrison for training purposes. The location of this facility would be just to the north of Sananandrah Drive and west of the location of Project 1D. This location allows ease of access for the off site units via the secondary Base entry and adjacency to the new Battalion Support Center.

Alternative Action

As an alternative to constructing this facility at the location noted, a new combined storage warehouse for all Guard uses at Fort Harrison was considered - see above 'Alternative Action' discussion. This alternative would combine the uses of projects 1A, 1B, 1C, 1D, 1E, 1F and 1G into one centralized warehouse facility.

No Action Alternative

This alternative foregoes construction of the shelter and requires that the off site Guard units conduct normal maintenance activities outdoors without the benefit of any cover.

1F - WASH RACK

Proposed Action
The proposed action would result in the construction of a new centralized wash facility for Guard vehicles at the Fort Harrison facility. This facility will allow for a controlled method of washing vehicles prior to maintenance and after maneuvers. Much of this cleaning is currently performed outdoors and the waste water created flows uncontrolled into open storm drainage ditches. The preferred location is in the immediately area of the CSMS and the UTES storage area.

Alternative Action
As an alternative to constructing this facility at the location noted, this function would be accommodated as part of a new combined storage warehouse noted above for the other Group A projects - see above 'Alternative Action' discussion. This alternative would combine the uses of projects 1A, 1B, 1C, 1D, 1E, 1F and 1G into one centralized warehouse facility.

No Action Alternative
The No Action Alternative would maintain the status quo, which is currently causing both drainage and environmental problems due to the discharge of wash water directly on the ground. This water is contaminated with POL residue without any type of containment or treatment. The runoff of this water is also contributing to the storm water drainage problem on Base.

1G - USAR COLD STORAGE BUILDING

Proposed Action
The proposed action would result in the construction of a covered storage building at the existing United States Army Reserve facility to allow for the housing of existing materials and vehicles that are currently stored outdoors. For operational purposes, the location of the building will be adjacent to the existing USAR facility. For security purposes, access to the building would be through the existing USAR fenced storage yard.

Alternative Action
As an alternative to constructing this facility at the location noted, a new combined storage warehouse for all military uses at Fort Harrison was considered - see above 'Alternative Action' discussion. This alternative would combine the uses of projects 1A, 1B, 1C, 1D, 1E, 1F and 1G into one centralized warehouse facility.

No Action Alternative
This alternative foregoes construction of a new warehouse and continues to store the existing materials and equipment outdoors without cover.

3.3.2 Action Group 2

2A - SIMULATION CENTER

Proposed Action

The proposed action would result in the construction of a new simulation center that would provide a centralized location to house existing and future simulation equipment at Fort Harrison. The preferred location is just to the south of the existing modular tank simulator located east of Sammurco Street in the center of the Base. This location provides ease of access to the classroom areas to the west and the Battalion Support Center to the northeast.

Alternative Action

As an alternative, additional modular units, similar to the existing tank simulator could be provided to accommodate this training need.

No Action Alternative

The No Action Alternative would maintain the status quo with simulation equipment located in a variety of locations throughout the Base.

2B - MILES/TASC BUILDING

Proposed Action

The proposed action would result in the construction of a new training and support center for the Military Integrated Laser Engagement function. This facility would be located directly to the north of the Battalion Support Center for ease of access to that building.

Alternative Action

As an alternative, the necessary training could be accommodated in existing buildings on Fort Harrison. However, because of the extensive technology component of this training, it is doubtful that renovation of existing buildings that were not designed to accommodate these functions could be accomplished in an economical manner that would adequately fulfill the needs of this specialized training.

No Action Alternative

The No Action Alternative would maintain the status quo, and not provide for the necessary upgrades to allow sufficient training for the units stationed at Fort Harrison.

2C - HELENA ARMED FORCES RESERVE CENTER

Proposed Action
The proposed action would result in the construction of a new centralized administrative center for the 150 employees currently located at a variety of buildings both on the Fort Harrison campus and at other locations in Helena. The preferred location is to the south of Womack Armory adjacent to the entry to the Veteran's Administration Hospital. This location will provide easy access for off site personnel and visitors without having to enter the actual Base training area. This is also one of the few areas on the existing site that is large enough to accommodate the building footprint and parking requirements for this building.

Alternative Action
As an alternative, the existing Reserve Center in Helena would be expanded and modernized to accommodate the existing need. This would require the relocation of a variety of personnel currently housed in temporary quarters at Fort Harrison to Helena.

No Action Alternative
The No Action Alternative would maintain the status quo, with administrative personnel housed in a variety of locations at Fort Harrison and at the existing Reserve Center in Helena.

2D - NAVAL RESERVE CENTER

Proposed Action
The proposed action would result in the construction of a new training and support center for the US Navy Reserves on the Fort Harrison Complex. The preferred location is in the southwest quadrant of the Base just north of the Veteran's Administration Hospital. From this location there is easy access to the main Base entry but traffic will not disturb other training sites and activities.

Alternative Action
As an alternative, one of the existing locations in Billings, Missoula or Great Falls could be expanded to accommodate the consolidation of all three facilities. This alternative would create much more travel as the proposed location at Fort Harrison is centrally located to all three of those cities. Also, it is expected that renovation costs would exceed the cost of a new centralized facility that would provide for state-of-the-art training.

No Action Alternative
The No Action Alternative would maintain the existing training sites in Billings, Missoula and Great Falls. This does not respond to the goal of consolidating the Naval Reserve mission for Montana into a single location that would allow both expanded training opportunities and lower the overall cost of providing this service.

3.3.3 Action Group 3

3A - AMMUNITION BUNKERS

Proposed Action
The proposed action would result in the construction of 3 new reinforced concrete ammunition bunkers to replace 3 existing outdated wooden bunkers currently located on site. The existing bunkers would be removed and the new bunkers constructed in the same location.

Alternative Action
Because the condition of the existing bunkers mandates replacement and blast zones have been established at the existing site, an alternative action is not appropriate and is not being considered.

No Action Alternative
The No Action Alternative would allow the continued use of the substandard outdated wood bunkers. The current construction presents a safety hazard to base personnel and a security risk, as the existing bunkers do not meet current construction or security standards.

3B - PISTOL RANGE EXPANSION & UPGRADE

Proposed Action
The proposed action would result in the expansion of the existing 8 point pistol training range to 30 points. This expansion and upgrade was the focus of an earlier EA that dealt specifically with the land acquisition to accommodate this project. A copy of that EA is available for review at the Base Environmental Office.

Alternative Action
An earlier EA was prepared specifically for the necessary Land Acquisition to accommodate the expansion and realignment of the pistol range. Alternatives to the expansion and realignment were presented as part of that EA. Because the recommendations of the EA for the expansion and realignment at the existing location were accepted and the necessary land was acquired for that specific purpose, no alternative action is being considered at this time.

No Action Alternative
The No Action Alternative would allow the continued use of the existing pistol range which does not meet the training needs at Fort Harrison. In the case of the Pistol Range, the current range is undersized for the present and projected usage.

3C - M16 RIFLE RANGE UPGRADE

Proposed Action
The proposed action would result in the expansion and upgrade of the existing M16 Rifle Range at the existing location to meet current training standards.

Alternative Action
An earlier EA was prepared specifically for the necessary Land Acquisition to accommodate the expansion and upgrade of the M16 range. Alternatives to the expansion were presented as part of that EA. Because the recommendations of the EA for the expansion at the existing location were accepted and the necessary land was acquired for that specific purpose, no alternative action is being considered at this time.

No Action Alternative
The No Action Alternative would allow the continued use of the existing M16 range which does not meet the training needs at Fort Harrison. The Rifle Range is outdated, does not offer the proper firing positions or training opportunities to the users. In both cases, necessary safety measures will be incorporated as part of the upgrades

3.3.4 Action Group 4

4A - UTES/CSMS WATER DIVERSION PROJECT

Proposed Action
The proposed action would provide grading and drainage work to allow surface water runoff to be channelized and routed through the Base, thus minimizing erosion and the continued maintenance caused by the erosion.

Alternative Action
Because this condition is site specific and limited to a very specific location on Base, an Alternative Action was not considered. Only the Proposed Action will provide a remedy to this ongoing maintenance and erosion problem.

No Action Alternative
The No Action Alternative would allow the continued drainage of the storm water runoff from west of the UTES/CSMS yard area to travel through the Base without any channelization thus continuing to cause erosion, groundwater pollution and maintenance problems.

4B - CONCRETE UTES COMPOUND

Proposed Action
The proposed action would provide for limited concrete paving in the primary vehicle circulation areas within the existing UTES Compound. This paving is necessary to limit ongoing maintenance costs created by the heavy tracked vehicles during turning maneuvers while they are being parked.

Alternative Action
The proposed alternative would be to concrete the entire UTES Compound yard, not just the primary circulation areas. While this would provide more protection than the Proposed Action, it is felt that this action is unnecessary as the majority of maintenance and erosion is created at the turning areas, not parking areas and the cost to pave the entire yard is not justified.

No Action Alternative
The No Action Alternative would allow the continued use with no paving and create the need for continual maintenance of the circulation areas to prevent ponding of water and erosion.

4C - MAIN BASE ENTRY UPGRADES

Proposed Action
The proposed action would provide for a more formal, landscaped entry and unified signage at both access routes onto the Fort Harrison Complex.

Alternative Action
Because there is no desire to relocate the entries and the site specific nature of this project, an alternative action was not considered.

No Action Alternative
The No Action Alternative would continue the use of the two entries as is, with no additional upgrades.

4D - HELICOPTER LANDING PAD

Proposed Action
The proposed action would provide for a landing pad near the existing Medical Unit Training Facility. While it is not anticipated that medical emergencies would be transported to the Medical Unit Training Facility, there is a possibility of outgoing medical emergencies and thus the need for a landing pad in the vicinity for training purposes. Currently, there isn't a landing pad in the central Fort Harrison area.

Alternative Action
An Alternative Action would be to upgrade the existing landing pad in the training area to accommodate this training. However, this location does not provide the training opportunities adjacent to the Medical Unit Training Facility.

No Action Alternative
The No Action Alternative would maintain the status quo, with no landing or training opportunities for helicopter evacuation presented at the base. The No Action Alternative would mandate that any type of medical transport from the base be done by ambulance.

SECTION 4

4.0 AFFECTED ENVIRONMENT

This section describes the human environment at Fort Harrison, providing baseline information to allow the evaluation of potential environmental impacts that could result from the Proposed Action(s), the Alternative Action(s) and the No Action Alternative(s). As stated in 40 CFR §1508.14, the human environment includes natural and physical resources and the relationship of people to those resources. The environmental baseline or resource areas described in this chapter were selected after identifying the potential issues and concerns of the Proposed Action(s), the Alternative Action(s) and the No Action Alternative(s). Only relevant resource areas are described; resource areas that would not be impacted are not described in this Section nor evaluated in Section 5.

The resource areas that may be impacted by the Proposed Action(s), the Alternative Action(s) or No Action Alternative(s) include operations and safety, air resources, geological resources, water resources, biological resources, cultural resources, visual resources, noise, socioeconomics, land use, and environmental programs.

4.1 LOCATION DESCRIPTION

4.1.1 Geographic Setting

All projects in this action are located on Federal Property at the Fort William Henry Harrison military installation. Fort Harrison is located approximately 3 miles west of Helena, Montana in the center of the eastern part of the State. Refer to Figure 4A on Page 4-2. The primary Fort area occupies 2,154 acres, an additional 4,117 acres are leased or are used with a land use permit.

4.1.2 General Landscape Of The Area

Fort Harrison lies in the foothills on the eastern slope of the Rocky Mountains approximately 10 miles from the Continental Divide. Generally the terrain is comprise of low rolling grassed hills with minimal tree cover.

4.1.3 General Climactic Conditions

Helena is located on the south side of an intermountain valley bounded on the west and south by the main chain of the Rocky Mountains. The valley is approximately 25 miles east to west, and 35 miles north to south. Helena is 4,157 feet above sea level; the average height of the mountains above the valley floor is 3,000 feet.

The Helena Valley has a semiarid climate that is typical of areas in Montana on the eastern side of the Continental Divide. Factors affecting the climate include invasions of maritime air masses from the Pacific Ocean and drainage of cool air into the valley from the surrounding mountains. The mountains to the north and east deflect shallow air masses of invading Arctic air to the east. Cold air can

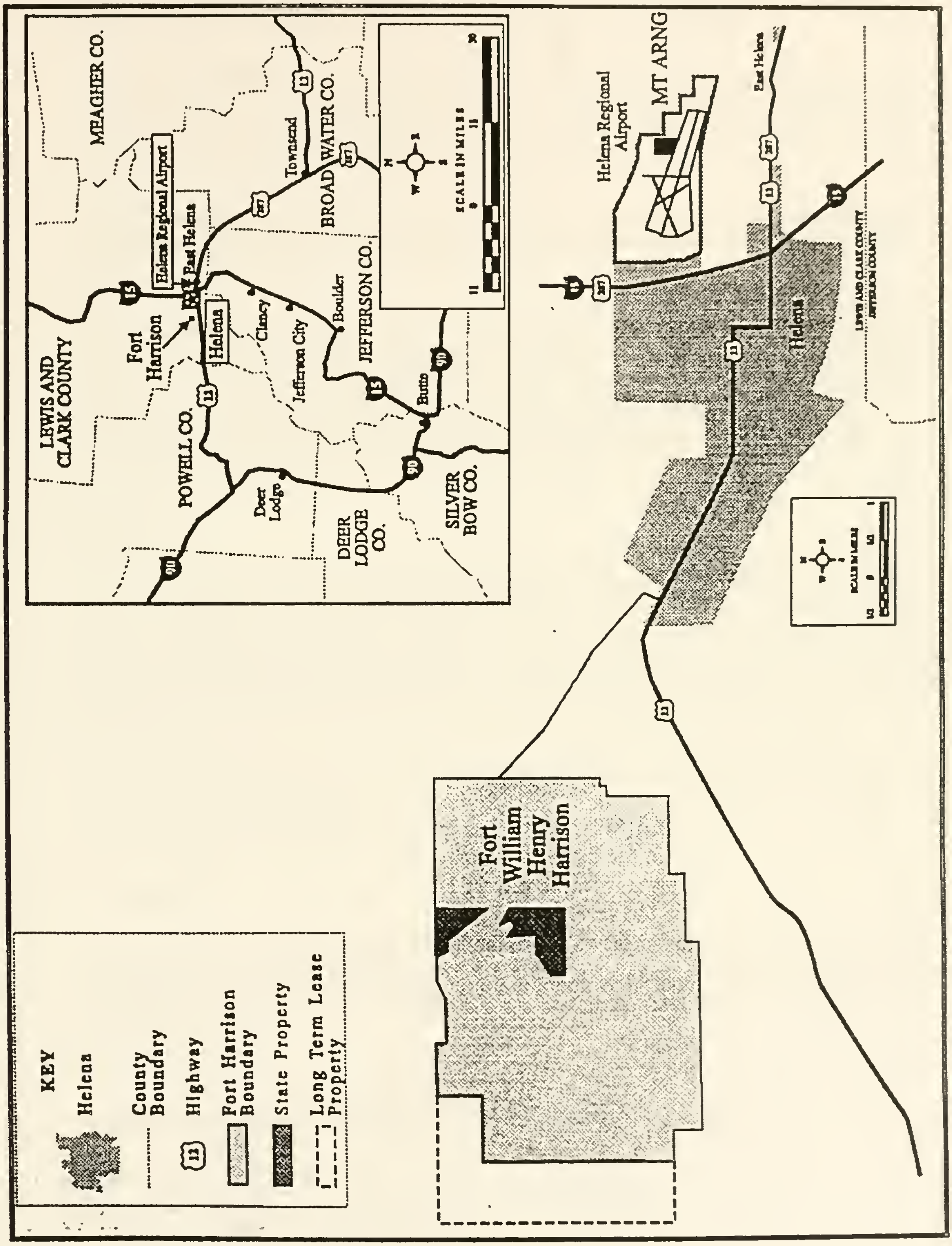

Figure 4A - Fort Harrison & Vicinity

collect in the valley and be trapped by inversions for several days during the winter and early spring months. These inversions can be pronounced.

Summertime temperatures are moderate, with maximum daily readings generally under 90° F and daily minimums near 50° F. The extreme summer temperatures are 105°F and 18° F. Daily winter maximums are near 30°F and minimums are 10°F to 15°F. The lowest recorded temperature is -42°F.

Winds are generally westerly throughout the year, averaging 7 to 8 miles per hour (mph). Stronger winds are also westerly, with maximum gust speeds of 55 to 65 mph.

The average annual precipitation is 11.37 inches. Most of the precipitation falls from April through July as frequent showers and thundershowers. June is the wettest month of the year with an average of 2.01 inches. Snow can be expected from September through May, with an average accumulation of about 48 inches. Snowfall during November to April averages 5 to 8.5 inches per month. The average relative humidity is 57 percent (City of Helena, 1996).

4.1.4 Mission

The Montana National Guard is charged with meeting the mandates of the United States Constitution and the Montana Constitution. Foremost is the mission of ensuring domestic tranquillity. In order to perform it's mission, the Guard must train and equip civilian-soldiers to be ready to respond to any emergency, be it a natural disaster or civil disturbance, as directed by the Governor. In the case of a national emergency, the Guard would respond under the direction of the President.

Fort William Henry Harrison serves as the focal point for the majority of all training in Montana and it's mission is to provide training areas and facilities for the Army National Guard, Army Reserve and Active Duty military.

4.1.5 Personnel

Approximately 170 employees work full-time at the Fort Harrison complex in various administrative, training and maintenance functions. Table 4A lists the current level of training in man-days from 1994 to 1996. A man day is defined as 1 full day of training by a soldier.

Table 4A
Number of Personnel Trained at Fort Harrison (Man-Days)

Year	Man-Days
1994	125,000
1995	107,690
1996	100,834

4.1.6 Operations And Training

The Fort Harrison complex currently provides the following military training opportunities:

Military Ranges (small arms only)
Military Operational Specialty Qualification (MOSQ) Schools
Dismounted Infantry Training
Land Navigation Course
Thermal Targets for M1 Tank Lane Training
Bivouac Area
Special Operations Training
Low Level Helicopter Training

In addition to the military training listed above, training opportunities occur for various local Law Enforcement Agencies as well as the Montana Highway Patrol and various city and county fire departments.

4.1.6.1 Military Firing Ranges

The following firing ranges are within Fort Harrison. The following ranges are used by 8 to 12 soldiers at once, typically on weekends only.

Pistol range: Handguns used on this range are .45 caliber and 9mm. There are two different types of ranges (combat and qualification); both use live ammunition. The combat range has targets that pop up, and a soldier has to shoot within a certain amount of time after the target pops up. The qualification range has stationary targets that a soldier shoots at for a score. The soldiers must attain certain scores to qualify on this range.

M16 zero range: Soldiers use this range to sight and fire live ammunition from the 5.56mm rifle. Sighting a weapon means practicing to find out where a soldier aims versus where the ammunition hits the target.

M16 qualification range: The 5.56mm rifle with live ammunition is used by soldiers on this range. This range has pop up targets at distances from 50 to 300 meters. The soldiers have to hit a certain number of targets to qualify on this range. Soldiers must qualify once a year on this range.

M60 range: The 7.62mm rifle is used with live ammunition for qualification and familiarization. Human-form plastic targets are used on this range.

M203 range: This is a grenade launcher range used by the soldiers to practice firing practice grenades from an M203 grenade launcher. This range is used for both familiarization and qualification.

M72 range: This range is used by soldiers to practice firing sub-caliber shoulder-fired rockets. No live ammunition is used; hard targets and plywood targets are used.

The Operations and Training section has established new procedures for use of the training ranges to allow recording of data pertaining to the type of use, length of use, quantity of ammunition used, and other information. The data will be input into a computer program, Range Facility Management Support System, to allow rapid preparation of usage reports.

4.1.6.2 Military Operational Specialty Qualification (MOSQ) Schools

Fort Harrison provides classrooms, training areas, and quarters for the Montana Regional Training Institute (MTRTI) for conducting weekend and annual training for Officer Candidate Training and Noncommissioned Officer courses. The MTRTI coordinates all MOSQ schools, and provides classroom and training support to several other agencies. Fort Harrison presently supports training for Army National Guard, Army Reserve, and Active Army, various special forces groups (e.g. Navy Sea, Air, and Land (SEAL) teams, Navy Sea Bees), Air Force Security Police, and Air Force Communications groups, plus local, state, and Federal law enforcement agencies. In total, roughly 30 different courses are offered at Fort Harrison annually, involving about 1,200 personnel during the year. These classrooms are located within the Fort Harrison complex.

4.1.6.3 Dismounted Infantry Training

Dismounted training is generally conducted once per month during the summer, with up to company-size units (120 personnel). Maneuvers are limited to foot traffic, and support vehicles are restricted to existing roads. Soldiers dismount from the M1 tank or M2A2 Bradley Infantry Fighting Vehicle, which are used only on existing roads, and enter into the training area. Typically, two platoons (60 soldiers) break up into squad formations of 7 to 8 soldiers and traverse various terrain within Fort Harrison. No live ammunition is used during infantry training.

4.1.6.4 Land Navigation Course

The land navigation course is used by platoon-size units (30 personnel). Personnel use the course for foot traffic only. This course is used approximately 35 to 40 times per year. The purpose of this course if for soldiers to train and practice moving from one point to another.

4.1.6.5 Thermal Targets For M1 Tank Lane Training

Tank silhouettes made of plywood and fitted with insulated electric heat coils are positioned at known distances from a tank course. The M1s have a sighting system that allows them to see in the dark. M1 tank crews practice acquiring these targets

during routine training. They practice getting their sights on the target and are timed on finding and sighting the target. No rounds are fired at these targets. Tanks are restricted to existing roads and parking lots during training.

4.1.6.6 Bivouac Area

During summer months, there are 5 separate areas on the Fort Harrison compound designated as a troop bivouac (camping) areas. These areas are used for platoon and company-size operations for about 10 to 15 days. Each area typically supports tents for a squad, company, or battalion. Occasionally, a generator is used to supply electricity for lights.

4.1.6.7 Special Operations Training

The landing strip at Fort Harrison (known as the Marshall Drop Zone) is used during special operations training. During this training, C-141 and C-130 aircraft use this area for dropping 15 pound practice bundles. Personnel also parachute into this area. Special Operations forces from active military components conduct infiltration (insertion) and exfiltration (extraction) exercises from helicopters flying at low levels.

4.1.6.8 Helicopter Training

The Fort Harrison training area has been used by the MT ARNG for low-level (below 500 feet) flight and other related training activities since 1960. Nap-of-the-earth flying may occur in the Fort Harrison training area (MT ARNG, 1995). Training of this type involves flight at varying airspeeds as close to the earth's surface as vegetation, obstacles, and ambient light will allow, while generally following the contours of the earth. Helicopters practice “touch and go” operations, hovering, and sling loading on a landing strip at Fort Harrison.

The actual hours of helicopter flight time at Fort Harrison are not tracked. Three types of helicopters are flown by the MT ARNG: the Black Hawk (UH-60), Huey (UH-1), and Kiowa (OH-58). The number of aircraft using the Fort Harrison training area typically varies from 2 to 8 aircraft during normal weekday operations. During drill weekends (3 or 4 weekends per month), up to 12 helicopters may be flown in the training area. Rarely are more than 6 helicopters present in the area at one time. The normal flight duration is 1.5 to 2 hours (Rahn, 1996).

Night operations in the summer occur generally after 9:00 to 10:00 pm, while night operations in the winter occur generally after 6:00 pm. The MT ARNG generates 10,800 operations per year at the Helena Regional Airport. The MT ARNG pilots fly approximately 96 hours per year per pilot. The majority of the flying operations are in the Hueys and Black Hawks (MT ARNG, 1995).

4.1.7 Safety

4.1.7.1 Helicopter Flight Safety

To ensure the safety of personnel and the public, and to avoid loss of property around installations, the Army implements safety considerations in all areas of flying operations. The Army conducts a comprehensive flight safety program to ensure the airworthiness of each aircraft, the proficiency of the aircrews, and the safety of airborne operations. Also, training flights are routed over sparsely populated areas whenever possible.

The Army classifies mishaps into categories – Class A, Class B, Class C, and High Accident Potential, characterized as follows:

- **CLASS A:** a total cost in excess of $1 million for injury, occupational illness, and property damage; a fatality or permanent total disability; or destruction or damage beyond economical repair to an Army aircraft.
- **CLASS B:** a total cost in excess of $200,000 (but less than $1 million) in property damage; permanent partial disability; or, hospitalization.
- **CLASS C:** damage in excess of $10,000 (but less than $200,000), or an injury or occupational illness which results in a loss of worker productivity greater than eight hours.
- **HIGH ACCIDENT POTENTIALS:** mishaps not meeting the definitions of Classes A, B, or C, but which because of damage or injury necessitate Army reporting.

The U.S. Army Safety Center (USASC) at Fort Rucker, AL, maintains mishap data by aircraft type. Mishap date for the type of aircraft based at the AASF are shown below:

Table 4B
Mishap Data by Aircraft Type

Aircraft	FY 86 - FY 95 Mishaps		Rate[1]	
	Class A	Class B	Class A	Class B
UH-1	67	20	1.20	0.36
OH-58	63	3	2.50	0.12
UH-60	33	24	1.91	1.39

[1] Per 100,000 flying hours
Source: Gil, 1996

The danger of bird strikes in this area is negligible. There has not been a bird strike to any Army helicopter during a training flight in the Fort Harrison area within the last five years (Rahn, 1996)

4.1.7.2 Military Firing Range Safety

All training on the firing ranges is done in accordance with Army Regulation 385-63 (Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat) and Department of Military Affairs Regulation DMAMT 210-21 (Installations, Ranges, and Training Areas). These two regulations dictate the size and configuration of the firing ranges. Further, all weapons training at Fort Harrison is controlled by published procedures in a document titled "Training Area and Range Standard Operation Procedures (SOP)," which is published in the local range handbook (MT ARNG, 1995c). The primary purposes of the SOP are to provide instruction and procedures for the ranges, to ensure training and firing ranges are maintained in a good state of readiness, and to mandate safety procedures for the operation of the ranges. Each specific range and training area has general and specific procedures listed in the training range manual to ensure the safe and effective use of the area. From 1991 through 1996 there has not been any safety violations or accidents on any of the ranges in Fort Harrison. Additionally, no munitions expended on the firing ranges have fallen outside the safety zones for the firing ranges (Schaan, 1996).

4.1.7.3 Other Specialty Schools Safety

Other schools that use the training areas do not use live ammunition, and there has not been a significant vehicle accident in over four years (Schaan, 1996). Two minor vehicle incidents did occur within the last four years on the ranges: one involved an M113 personnel carrier that rolled over, and another involved a dump truck that rolled over. There were no injuries in either incident.

4.2 LAND USE

The land use discussion includes a description of particular uses of land on and adjacent to Fort Harrison, constraints that affect land use, and land values.

4.2.1 Existing Land Use

Fort Harrison, a major Army training area, comprises 2,154 acres in west central Montana. An additional 4,117 acres of land are leased or permitted for use. Land use within Fort Harrison contains a cantonment area, with billeting, dining, latrine facilities and site support operations, ranges for small arms qualification, and a drop zone and helicopter landing area. Land on the southern perimeter of Fort Harrison is occupied by the Veterans Administration. Land use to the east, west, and north of Fort Harrison consists of scattered farms and residences, grazing land, and foothills to mountainous terrain.

4.2.2 Building Function And General Architecture

There are approximately 90 structures on the Fort Harrison base at this time. While some structures date back to the 1920's, the majority of the structures were constructed during World War 2. Only 10-15 of the current structures are less than 20 years old. The most modern facilities on the base include the Administration Building, a new Training Support Center and a BOQ facility that is currently under construction. Over ½ of the World War 2 vintage buildings are vacant and scheduled for demolition.

The majority of the buildings constructed up to the 1960's are residential in character with wood frame construction, siding and pitched roofs. Some of the World War 2 buildings were constructed of clay tile or other forms of masonry.

The more recent facilities are constructed with brick veneer, with either wood or steel back up framing. Roofs are a combination of flat, low slope and high slope with both asphalt shingles and metal roofing materials.

4.2.3 Local Communities

The nearest urban area is Helena, located 3 miles to the east with a population of approximately 25,000 in the City and 59,000 in the Tri-County area (1990 census). Helena is in the center of a 250 mile circle that encompasses over 70% of Montana's population.

4.2.4 Land Use Management Plan

The environmental management plan in place deals primarily with noise. Environmental noise from Army activities is monitored by the ICUZ program, which defines three noise zones (see Section 4.5.1.1). The Army uses these compatibility zones for land use planning to prevent conflicts with noise sensitive land uses such as residential housing and hospitals. Land uses such as commercial, industrial, and agricultural (except livestock) are compatible with most noise environments. The only sensitive receptor near Fort Harrison is the Veterans Administration Hospital. There are no existing noise constraints or issues regarding any of the MT ARNG training activities at Fort Harrison. Potential future noise issues could arise if new residences continue to be constructed in close proximity to Fort Harrison. New community members not economically dependent on the military installation may have the tendency to be more annoyed by noise related to Fort Harrison activities.

4.2.5 Property Ownership

The majority of the land included in the Fort Harrison complex is owned by the Federal Government. There is also some State and leased land. All land area housing projects involved in this EA is owned and controlled by the Federal Government.

4.3 AESTHETICS AND VISUAL RESOURCES

With the exception of the facilities on the Fort Harrison complex and the adjacent VA Hospital, most of the surrounding area is comprised of agricultural land and buildings with limited but increasing residential development.

Terrain to the east, south and west is generally level with few trees or other natural features. To the north, there are rolling foothills with scattered trees at the higher elevations.

There are no significant natural or man made features that would be affected by this action(s).

4.4 AIR QUALITY

The air resources section describes the natural conditions that influence the quality of the air and existing concentrations of various pollutants. Precipitation, wind direction and speed (horizontal airflow), and atmospheric stability (vertical airflow) are factors that determine the extent of pollutant dispersion.

4.4.1 Criteria Air Pollutants

Air quality is determined by comparing ambient air levels of criteria pollutants with National Ambient Air Quality Standards (NAAQS) and Montana Ambient Air Quality Standards (MAAQS). The NAAQS were established by the U.S. Environmental Protection Agency (USEPA) to define the allowable concentrations of six criteria air pollutants. These six criteria pollutants are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with a diameter of 10 microns or less (PM_{10}), and lead (Pb). The NAAQS include maximum concentrations of pollutants that may be reached, but not exceeded, in a given time period. The standards are set to protect human health (primary standard) and welfare (secondary standard). The primary standards are set with a reasonable margin of safety to protect sensitive members of the population.

Criteria pollutants may directly or indirectly originate from diverse mobile and stationary sources. Most pollutants are generally emitted directly from a source, except for O_3. Most O_3 forms as a result of volatile organic compounds (VOC) and oxides of nitrogen (NO_x) reacting with sunlight in the atmosphere.

Areas not meeting ambient air quality standards are designated as nonattainment for the specific pollutant causing violation. Standards are not to be exceeded more than once per year, except for O_3 and PM_{10} standards, which are not to be exceeded more than an average of one day per year. For example, four days with an exceedance of the O_3 standard in three years or less is a violation. Both the primary NAAQS and the MAAQS are presented in Table 4C on Page 4-12.

Air quality at Fort Harrison and in the training areas is generally very good. Fort Harrison and the training areas are presently designated as being in attainment for all criteria pollutants by the USEPA and the state. However, an area near the Helena Airport is in non-attainment for lead and SO_2, as a result of smelting operations at the ASARCO plant in East Helena (Linconbock, 1996).

A combination of inversion strength and wind speed determine the ventilation or dilution factor for an area. Although ventilation in the area is normally adequate to disperse most pollution, ventilation decreases during cooler months, and carbon monoxide and particulates reach their highest levels in late fall and winter.

Criteria pollutants are quantified by the type of source. For example, aircraft and automobiles are mobile sources. Emissions from these sources are spread over wide areas. Point sources, however, are found at fixed locations. For example, power plants and fuel tanks are point sources. Air emissions inventories generally include specific point sources. Other types of studies, such as air conformity studies, also identify mobile sources.

Table 4D on Page 4-12 provides emissions inventories for criteria pollutants at MT ARNG locations. The actual and potential emission totals include motor vehicle emissions, but not helicopter emissions. Actual helicopter emissions are provided in a separate line. The potential emissions are the amount of air pollutants that could be released if all sources were emitting the maximum amount of emissions.

As shown in Table 4D, Fort Harrison and the training areas do not produce substantial amounts of criteria pollutants. The primary source of MT ARNG criteria pollutants are helicopters, which operate out of the Helena Regional Airport. Emissions from the helicopters are dispersed over a 100-mile radius area around Helena, where the helicopters are flown, including the training areas. Other mobile sources of criteria pollutants include aerospace ground equipment, and employee and government vehicles. Stationary sources of criteria pollutants include helicopter and vehicle maintenance activities, heat plant emissions, and refueling operations.

4.4.2 Ozone Depleting Substances

Ozone depleting substances (ODSs) are compounds (e.g., freon) that may cause or contribute to degradation of the earth's stratospheric ozone layer. Stratospheric ozone protects health by screening unwanted ultraviolet emissions from the sun. Stratospheric ozone should not be confused with tropospheric, or ground-level, ozone (which is regulated by the NAAQS standard and can be harmful to human health). ODSs are listed under Section 602 of the Clean Air Act, which also specifies timeframes for the phase-out of ODSs. Although ODSs are being phased out, there are uses and supplies of ODSs. For example, some large fire extinguishers use ODS propellants.

DMAMT Regulation 200-8 mandates the elimination of most ODSs. As buildings at Fort Harrison are modified and equipment or engineering systems are upgraded, non-ODSs are being used in compliance with DMAMT Regulation 200-8.

Table 4C
Primary National and Montana Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS		MAAQS
		mg/m^3	ppm	
O^3	1 hr	235	0.12	.01 ppm
CO	1 hr 8 hr	40,000 10,000	35 9	23 ppm 9 ppm
NO$_2$	1 hr AAM	-- 100	-- 0.05	.03 ppm .05 ppm
SO$_2$	24 hr Annual	365 80	0.14 --	.05 ppm .01 ppm
PM$_{10}$	24 hr AGM	150 --	-- --	150 mg/m^3 50 mg/m^3
Pb	90 day 1 month	1.5 --	-- --	1.5 mg/m^3 --

AAM = Annual Arithmetic Mean
AGM = Annual Geometric Mean
mg/m^3 = Micrograms per cubic meter
ppm = Parts per million

Table 4D
Actual and Potential Air Emissions (typ)

Pollutant	PM$_{10}$	SO$_2$	NO$_x$	CO	VOCs	Lead
Actual Emissions - Fort Harrison[a]	0.13	0.13	1.08	0.38	0.47	2.64e-05
Actual Emissions - AASF[a]	0.03	0.05	0.29	0.06	0.27	1.03e-05
Potential Emmissions - Fort Harrison[a]						
Potential Emissions - AASF[a]	1.79	0.09	15.00	4.63	7.47	3.69e-05
Actual Emissions - AASF (helicopters)[b]	0.47	0.10	3.90	0.84	0.61	1.54e-05

[a] Lead emissions are abbreviated; e.g., 2.64e-05 is equal to 0.0000264 typ.
All lead and most SO$_2$ emissions are from waste oil burners.
Most VOC emissions are from fuel storage and transfer operations.
Most PM10, NOx, and CO emissions are from heating operations.

[b] Calculations are based on existing flight hours.

Neg = negligible
VOC emissions include only hydrocarbons
NA = not applicable

Sources: MT ARNG, 1996e; MT ARNG 1995.

4.4.3 Hazardous Air Pollutants

An extensive list of hazardous air pollutants (HAP) has been identified by the U.S. Environmental Protection Agency(EPA). HAPs are generated during numerous MT ARNG activities. Maintenance activities, for example, use a variety of cleaning, etching, or painting materials that contact volatile hazardous constituents, which are released to the atmosphere when the product is used. These products can represent a health hazard for base personnel and, especially, sensitive receptors located in the vicinity of the facility. HAPs may also impact the receptors in the natural environment (i.e., plants and animals). The MT ARNG is required to track the total amount of HAPs at their facilities under the reporting requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA). The totals for Fort Harrison are 0.54 tons per year (tpy) (actual emissions) and 9.00 tpy (potential emissions). The AASF totals are 0.26 tpy (actual emissions) and 0.43 tpy (potential emissions) (MT ARNG, 1996e).

4.4.4 Prevention Of Significant Deterioration

Air quality can affect visibility. Certain areas are designatetd as prevention of significant deterioration (PSD) areas. Class I PSD areas, where visibility is an important value, are considered when a Federal action may affect air quality. The nearest PSD Class I area to Fort Harrison is Gates of the Mountains Wilderness Area, which is about 20 miles north of Helena. Another Class I area, the Anaconda-Pintler Wilderness Area, is about 75 miles southwest of Helena.

4.4.5 Sensitive Receptors

Sensitive receptors are populations that are more susceptible to the effects of air pollution than is the general population. Sensitive receptors include populations found at facilities such as long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, public schools, playgrounds, child care centers, and athletic facilities. Receptors near localized sources of toxics and carbon monoxide are of particular concern. The nearest residence is about 0.5 miles away. The Veterans Administration Hospital, another sensitive receptor, is located in the center of the eastern portion of Fort Harrison. No other sensitive receptor is found in the immediate vicinity (at or within a quarter mile) of the property (MT ARNG, 1995d).

4.5 NOISE

Sounds which disrupt normal activities or otherwise diminish the quality of the environment are designated as noise. Noise can be stationary or transient, and intermittent or continuous.

Community response to noise is based on a subjective assessment of the daily noise environment. Factors that affect this subjective assessment include the noise

levels of individual events, the number of events per day, and the time of day at which the events occur. Most environmental descriptors of noise are based on these three factors, although they may differ considerably in the manner in which the factors are taken into account.

The decibel (Db) is the physical unit commonly used to describe sound levels. Sound measurement is further refined by using an "A-weighted" decibel (dBA) scale which emphasizes the audio frequency response curve audible to the human ear. Thus, the dBA measurement more closely describes how a person perceives sound. Figure 4B provides a range of sound level values in dBA for common sounds and for typical environments.

Scientific studies and social surveys that have been conducted to appraise community annoyance to all types of environmental noise have found the day-night average sound level (L_{dn}) descriptor to be the best measure of annoyance. The L_{dn} describes the 24-hour or daily noise environment. To compute an L_{dn}, single noise events are measured using an A-weighted scale with corrections added for the number of events and the time of day. A 10-decibel (dB) penalty is added for noise that occurs between the hours of 10 p.m. and 7 a.m. because nighttime noise events are considered more annoying than noise occurring during daytime. The L_{dn} descriptor is accepted by Federal agencies, including the U.S. Army, as a standard for estimating noise impact and establishing guidelines for comparable land uses.

The U.S. Department of Housing and Urban Development (HUD) has established criteria that consider areas with noise levels of 75 L_{dn} or greater as unacceptable living environments. The DoD, USEPA, and other agencies consider noise levels in excess of 65 L_{dn} as "normally unacceptable" for noise sensitive land uses such as residences, schools, and hospitals. Houses located in areas between 65-75 L_{dn} may not qualify for Federal mortgage insurance under HUD or Veterans Administration regulations without additional costs associated with installing noise attenuation.

The Sound Exposure Level (SEL) is the scale used to describe the energy content of flyover noise. The SEL is a single event measure of the amount of noise energy from a source normalized to one second of time. Measurements of SEL tend to be higher than single peak measurements because the energy is compressed into the one-second time period. An SEL is a combination of level and duration, thus, SEL values diminish with increased altitude of an aircraft and distance from the receptor.

4.5.1 Stationary Noise Sources

With the exception of the Firing Ranges, the only Stationary Noise Source currently on base centers around the U.T.E.S. and the C.S.M.S. buildings which deal with the maintenance of all base equipment and vehicles.

There are no other significant stationary sources of noise.

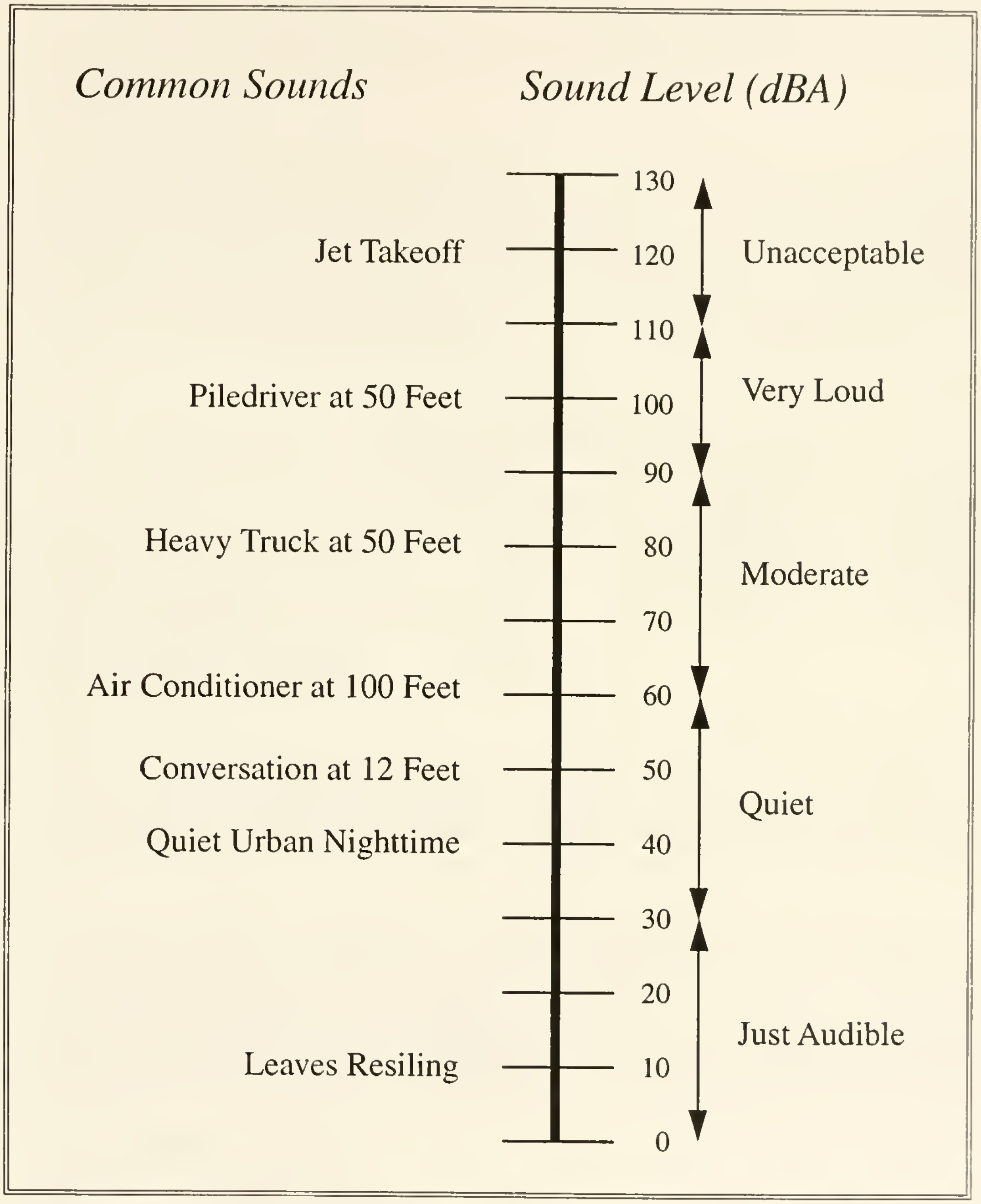

Figure 4B - Typical Noise Levels

4.5.1.1 Small Arms Noise

Army Regulation 200-1 (Chapter 7) implements all Federal Laws concerning environmental noise from Army activities through the Installation Compatible Use Zone (ICUZ) program. The ICUZ program defines three noise zones. Table 4E presents a comparison of noise zones and weighting schemes. An ICUZ Study, *Environmental Noise Study No. 52-34-QT44-92*, was completed for Fort Harrison in September, 1992.

Currently the Army does not use the L_{dn} to evaluate the noise from small arms ranges. The linear peak sound level (dBP) is used to define these noise zones. The dBP weights all frequencies of the noise equally and provides the best correlation between the noise from small arms ranges and the percent of the population highly annoyed. The decision to describe small arms range noise with dBP was made by the U.S. Army Environmental Hygiene Agency in 1982 (Luz, 1982).

Table 4E
Description of Noise Zones

Noise Zone	Population Highly Annoyed	Transportation (dBA)	Small Arms (dBP)
1: Compatible	<15	<65 dBA	<87 dBP
II: Normally Incompatible	15-39	65-75 dBA	87-104 dBP
III: Incompatible	>39	>75 dBA	>104 DBP

dBA decibels, A-weighted < less than
dBP decibels, P-weighted > greater than
Source: USA, 1992

The current noise levels at the training ranges at Fort Harrison are depicted in Figure 4C. The normally incompatible (Zone II) noise zone extends almost to the eastern and southern installation boundaries. A Veterans Administration hospital is located adjacent to the Fort Harrison military complex and outside of the Zone II contour.

The noise zones for the small arms ranges were generated using a model developed by the U.S. Army Environmental Hygiene Agency. The model used the "equal annoyance principle" to locate the noise zone boundaries. Under this model, the outer noise Zone II boundary is located at the distance from the range where 15 percent of the population is highly annoyed. The inputs to this procedure are the range location, weapons fired on the range, and the direction of fire (USA, 1992)

4.5.2 Mobile Noise Sources

Mobile Noise Sources include helicopter training exercises between the AASF located at the Helena Regional Airport and Fort Harrison and vehicular traffic. The

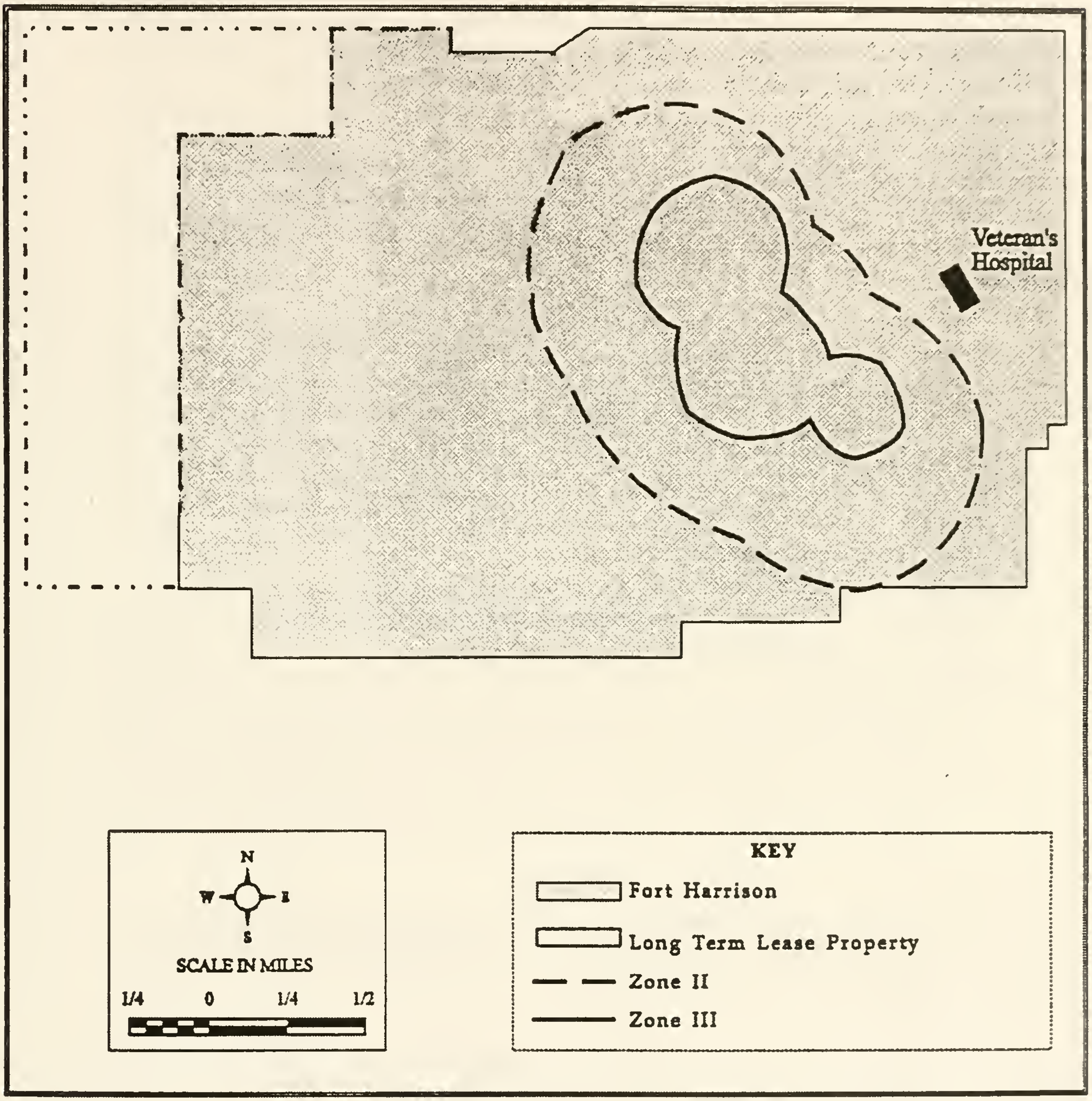

Figure 4C - Noise Zones II and III at Fort Harrison

helicopter training flights are essentially low level training exercises that have been performed at this facility since 1960. Only four noise complaints were filed with the AASF in 1996 and 4 during the first 9 months of 1997. Those complaints do not necessarily involve military aircraft and are not specific to the Fort Harrison area, but the entire Helena area.

Other mobile noise sources center on vehicles, both personal and military. There have been no noise complaints registered at Fort Harrison in the previous several years regarding noise generated from vehicles.

4.5.2.1 Aircraft Noise

Noise produced by aircraft during takeoff and landing operations is of major interest. These noises fall into a broad range of "transient" noises, which come and go in a finite period of time. Depending primarily on the type of aircraft, type of operations, and distance from the observer to the aircraft, the maximum fly over noise levels vary widely in magnitude, refer to Table 4F. The duration of the noise also varies depending on the proximity of the aircraft, speed, and orientation with respect to the observer.

The established flight routes between the AASF at the Helena Regional Airport and the training areas at Fort Harrison experience occasional noise from overflights of helicopters. Most of the residents in these areas are accustomed to the noise generated by the helicopters. Only 4 noise complaints were registered with the MT ARNG during 1996, and 4 have been filed through June of 1997 (Martinka 1997). Those are total noise complaints received and do not necessarily mean the complaints were a result of any action by MT ARNG helicopters. The MT ARNG try to avoid flying along noise sensitive areas enroute to Fort Harrison, which are marked on maps at the AASF at the Helena Regional Airport (Rahn, 1996).

Table 4F
Helicopter Noise Levels (Flyover) at 1,000 Feet Above Ground Level

Distance to Side of Path (Feet)	Sound Exposure Levels, dBA	
	UH-1	UH-60
0	92	87
200	92	87
500	91	87
800	90	86
1,000	90	86
Source: USA, 1992		

4.5.2.2 Military Operational Specialty Qualification Schools Noise

Primary noise for specialty schools is generated by dismounted infantry training and land navigation training. The majority of the noise is generated by vehicles (tanks

and Bradley Infantry Fighting Vehicles) traveling on established roads within the area. The maximum speed limits for all range roads and tank trails is 25 mph for wheeled vehicles and 15 mph for tracked vehicles unless otherwise designated. The vehicles stop on the established roads and then soldiers dismount and move throughout the area while on exercise. Additional noise is generated by foot traffic and talking. Groups of soldiers typically ranging in size from two to eight move throughout the area practicing navigation, tactics, and maneuver. No live ammunition is used on the exercises. Background noise levels at Fort Harrison and the training area are similar to other rural areas averaging from 33 to 55 L_{dn}.

4.5.3 Sensitive Receptors

Sensitive receptors are populations that are more susceptible to the effects of noise than is the general population. Sensitive receptors include populations found at facilities such as long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, public schools, playgrounds, and child care centers.

No sensitive receptors are located on the Fort Harrison complex.

The Veteran's Administration Hospital, which is immediately adjacent to the base is a sensitive receptor. The Hospital is situated to the south of the main developed area of the base and east of the firing range area. The Hospital is more than ½ mile from the base maintenance facilities and equipment storage areas and ½ mile from the pistol firing range. The rifle range and other troop training areas are greater than 1/4 mile from the Hospital. At this time, there have been no noise complaints filed by the VA at Fort Harrison.

The nearest private residence is approximately ½ mile from the identified noise sources on the base. There are no other sensitive receptors in the immediate area.

4.5.4 Noise Monitoring Results

Refer to discussion in 4.5.1 and 4.5.2.

4.5.5 Federal, State And Local Noise Standards

Refer to discussion in 4.5.1 and 4.5.2.

4.5.6 Land Use Compatibility

Environmental noise from Army activities is monitored by the ICUZ program, which defines three noise zones (see Section 4.5.1.1). The Army uses these compatibility zones for land use planning to prevent conflicts with noise sensitive land uses such as residential housing and hospitals. Land uses such as commercial, industrial, and agricultural (except livestock) are compatible with most noise environments.

The only sensitive receptor near Fort Harrison is the Veterans Administration Hospital. There are no existing noise constraints or issues regarding any of the MT ARNG training activities at Fort Harrison. Potential future noise issues could arise if new residences continue to be constructed in close proximity to Fort Harrison. New community members not economically dependent on the military installation may have the tendency to be more annoyed by noise related to Fort Harrison activities.

4.6 GEOLOGY AND SOILS

Geological resources include the physical surface and subsurface features of the Earth such as the physiography, geology, soils, and the seismic nature of an area.

4.6.1 Topography

Fort Harrison is located on the edge of the Helena Valley, a northwest-trending oval-shaped basin covering about 875 square miles. The valley is bounded on the west by the Scratchgravel Hills, on the southwest by the main range of the Rocky Mountains, on the south by the Elkhorn Mountains and Boulder batholith, the Big Belt Mountains to the north, and the Spokane Bench to the east (see Figure 4D). The western part of the valley is gently sloping, while the eastern portion of the valley consists of low rolling hills.

Mount Helena, on the southern edge of the city of Helena, rises to approximately 5,460 feet. Elevations at Fort Harrison range from 3,950 feet in the southeast to 4,818 feet near the southwest corner.

4.6.2 Geologic Bedrock Type

Stream deposits (Quaternary alluvium) approximately 1 to 20 feet thick, underlie the northern half of Fort. Slope wash is comprised of soil and rock material deposited on slopes by the action of gravity and by surface water runoff not concentrated into stream channels. These deposits consist of beds of coarse gravel interlaid with thin irregular beds and lenses of silt and clay. The gravel, in a matrix of sandy and silty clay, is composed of fragments of quartzite, shale, and limestone (USGS,1986).

Sedimentary bedrock, consisting of sandstone, shale, limestone, and dolomite, underlies much of the southern half of Fort Harrison. This bedrock also underlies the slope wash and stream deposits. This layer is several thousand feet thick. These rocks are inclined at moderate to steep angles as a consequence of the bending and tilting of the rocks by forces that formed the Rocky Mountains. The sedimentary bedrock ranges from middle Late Cretaceous age (about 86 million years ago) to Middle Proterozoic age (about 1,600 million years ago).

Plutonic bedrock underlies southeastern Fort Harrison and scattered areas throughout the rest of the Fort. Deep erosion has exposed most of the plutons at

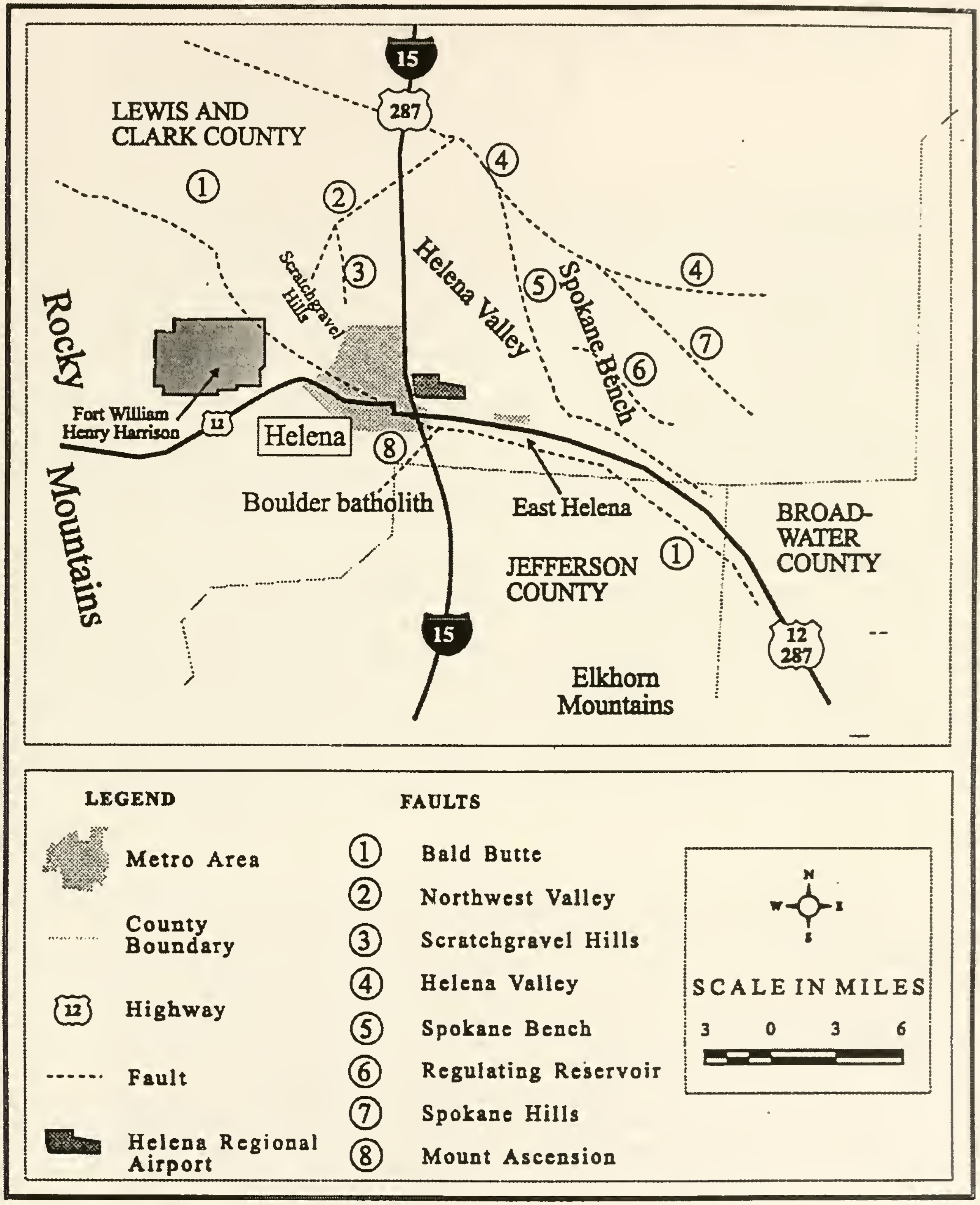

Figure 4D - Physiography and Seismic Features of the Fort Harrison Vicinity

the surface. These rocks, mostly granite but some diorite and gabbro, range from early Tertiary age (45 million years ago) to Late Cretaceous age (about 78 million years ago) (USGS, 1986).

4.6.3 Seismic Conditions And Fault Features

The Lewis and Clark Line, a 10 to 50 kilometer (6 to 30 mile) wide zone of faulting, separates an area of sedimentary, volcanic, and plutonic bedrock south and west of the Helena Valley from an area of sedimentary deposits in and north of the Helena Valley. The Bald Butte Fault, forming the southern boundary of the line, runs through the northeast corner of Fort Harrison (see Figure 4E). An unnamed branch of the Bald Butte Fault runs through the north central portion of Fort Harrison. Other unnamed faults are located from 1/2 to 2 miles southwest and west of the Fort area.

The Bald Butte Fault was the locus of many small earthquakes in 1973 and is believed to be the most seismically active fracture in the area. Vertical displacement along the fault varies from less than 200 meters (approximately 650 feet) to more than 4,400 meters (14,400 feet). Recent movement of the fault is believed to be horizontal rather than vertical (USGS, 1986).

Several hundred earthquakes have been felt in the Helena area since it was settled in 1864. Most of the earthquakes have been of weak to moderate intensity (II to IV on the Modified Mercalli Scale, or 1.6 to 3.5 on the Richter Scale). These earthquakes are capable of causing only minor damage. In October, 1935, a strong earthquake struck Helena (the epicenter was about 10 miles northeast of the city center) with an intensity of VIII on the Modified Mercalli Scale (6.2 on the Richter Scale). The earthquake and aftershocks caused four deaths, about 50 injuries, and about $4 million in property damage. Approximately 300 buildings sustained serious damage from this event. Several other powerful earthquakes (6.2 to 7.1 on the Richter Scale) occurred in the region between 1925 and 1959 causing minor damage in Helena.

Helena lies in Zone 3 on the seismic zonation map in the Uniform Building Code (International Conference of Building Officials, 1991), with ground motion of 38 percent of gravity. In this zone, earthquakes with a Modified Mercalli intensity of VIII or greater (5.5 or higher on the Richter Scale) are anticipated. Major damage would occur in poorly built or designed structures, while only slight damage would occur in buildings designed for seismic Zone 3. Primary earthquake effects include ground motion and surface faulting—a rupture caused by different velocities of movement on either side of a break in the ground. Secondary effects from earthquakes include landslides and liquefaction—the process of changing soil and unconsolidated sediments into a watery mixture following an earthquake, especially in areas of saturated sediments. Areas underlain by unconsolidated sediments, such as the slope wash, are more susceptible to both primary and secondary earthquake effects than areas underlain by bedrock, due to amplification of ground motion in unconsolidated surficial materials and, possibly, a longer duration of

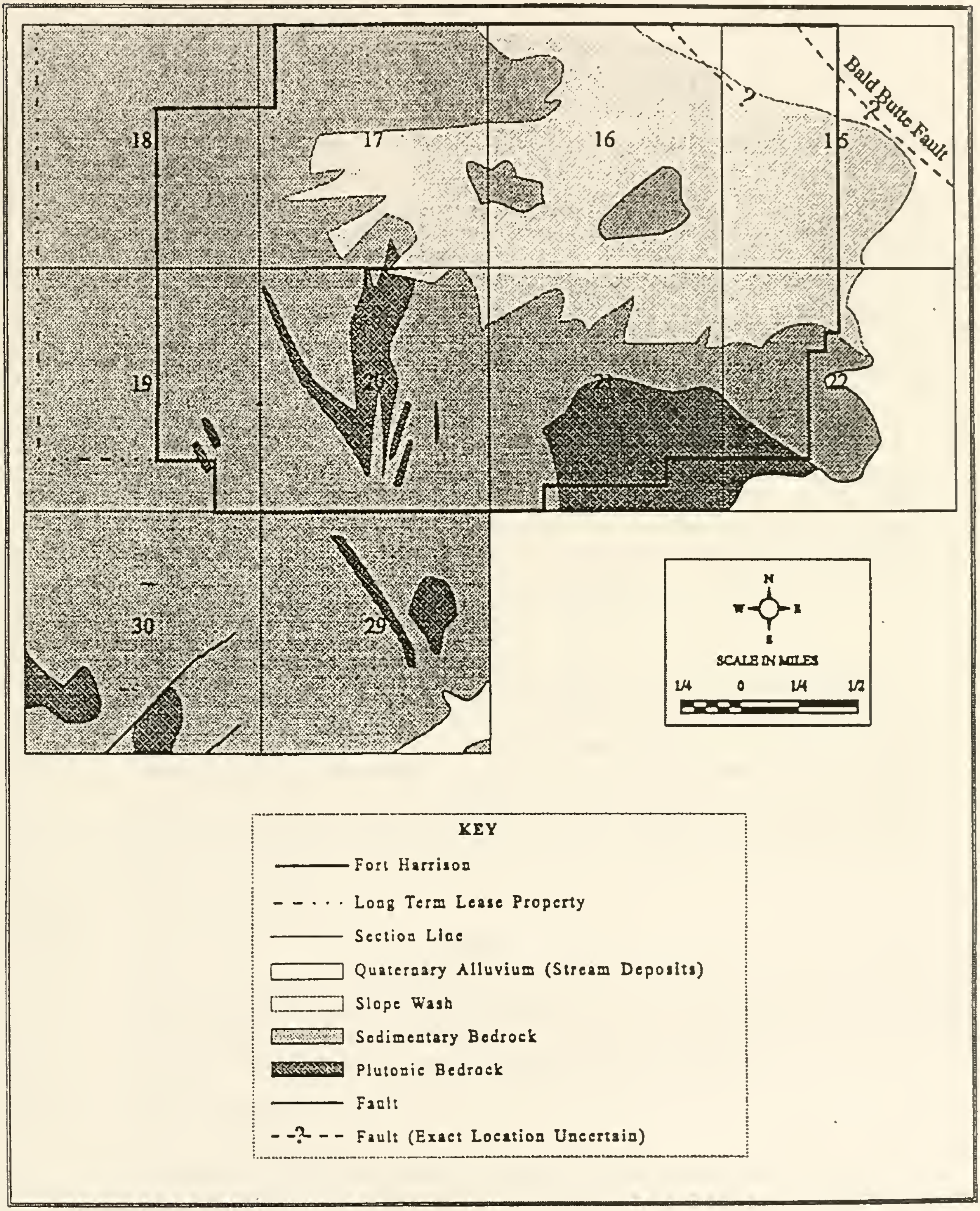

Figure 4E - Geology of Fort Harrison Vicinity

shaking in these materials. The earthquake record in the area is much too short to identify or predict any cyclic recurrence of earthquakes. Activity at an intensity of I to V (Richter Scale magnitude of 1.0 to 4.1) is almost certain to continue. The possibility exists than an earthquake of intensity VI or greater (Richter Scale magnitude of 4.1 and greater) might occur at any time (USGS, 1986).

4.6.4 Soil Types

Soils in the Helena area formed in alluvial terraces or fans in deposits of primarily sands and gravels or weathered directly from rocky material. The pattern of soils in the vicinity of Fort Harrison is complex because of different parent material (bedrock and various types of deposits), erosion and drainage patterns, and slopes. Soils that have been identified at Fort Harrison include Torrifluvents, Musselshell-Crago Complex, Roto-Pensore-Crago Complex, Geohrock-Tolman-Channery loam, Thess loam, Crago-Musselshell Complex, Hauz-Tolman Channery loam, Chinook Sandy loam, Fluaquents and Aquolls, Musselshell-Roto-Pensore Complex, and Sappington-Musselshell Gravelly loam.

Slopes are between 0 and 8 percent for most of the soils. Slopes on the Crago-Musselshell Complex, Geohrock-Tolman-Channery loams, and the Hauz-Tolman Channery loams range from 4 to 35 percent. The Roto-Pensore Crago Complex contains slopes from 15 to 45 percent. These soils have a surface layer of loam extending to a depth of about 4 inches. Gravelly loams, sandy loams or very gravelly loams extend to a depth of 40 to 60 inches.

All of the aforementioned soils have a moderately low runoff potential. The permeability is moderate (from 0.6 to 2.0 inches per hour) to a depth of about 20 inches, and moderately rapid (2.0 to 6.0 inches per hour) at greater depths (generally 20 to 30 inches). The depth to the water table is greater than 60 inches. The rate of water transmission throughout the soil is moderate. The shrink-swell potential (the change in volume from dry to wet conditions) is low. The hazard of wind erosion is slight. The hazard of water erosion ranges from slight where the slopes are gentle to moderate where the slopes are steeper. No visible areas of erosion are evident.

4.6.5 Agricultural Land

Although there is considerable irrigated prime farmland adjacent to the Fort Harrison Complex, the land involved with the projects on the main developed area of the base is not considered prime agricultural area. The land in the firing range area is not tillable but has been used for grazing prior to Federal ownership.

4.6.6 Mining Activities

The plutonic rocks in the vicinity of Fort Harrison have been mineralized and contain veins of gold. Erosion of these rocks have released gold to alluvium of modern

drainages (USGS, 1994). Gold has been mined in the vicinity of Helena. There are several dozen prospects within the Fort Harrison area, including 8 mine shafts.

Scattered coal deposits are located about 10 miles to the west of Fort Harrison. These deposits are not commercially mined (USGS, 1994; Porter, 1996).

No gravel or fill operations were identified within a mile of Fort Harrison (USGS, 1985; USDA, undated).

4.7 WATER RESOURCES

This section describes surface waters and groundwater at the MT ARNG properties. Wetlands are described in Section 4.8.5, Biological Resources. Natural and human-induced factors determine the quality and quantity of water resources, and are described as relevant to this study.

4.7.1 Hydrology

4.7.1.1 Groundwater

Fort Harrison lies on the western edge of a valley that is bounded by the Elkhorn Mountains and the Boulder batholith to the south, the Scratchgravel Hills to the west, the Big Belt Mountains to the north, and the Spokane Bench to the east. Groundwater flow in the area is generally eastward, flowing from the western margins of the valley toward Lake Helena.

The Helena Valley-Fill Aquifer System (HVFAS) underlies the northeast part of Fort Harrison, as well as most of the valley. This aquifer system includes an area of about 60 square miles. The valley is filled to a depth of approximately 6,000 feet with fine- and coarse-grained sediments, overlain with about 100 feet of alluvium. The upper few hundred feet of valley fill is composed of complexly stratified lenses of cobbles, gravel, sand, silt, and clay. Lateral discontinuity of fine-grained layers allows hydraulic interconnection of water-yielding zones, which function as one complex aquifer. Aquifer recharge is through infiltration of streamflow, leakage from irrigation canals, infiltration of excess irrigation water, and inflow from fractures in bedrock. Discharge is through leakage to streams and drains, upward leakage to Lake Helena, and withdrawals from wells. This aquifer system is a major source of domestic water for local residents; most domestic water wells are less than 70 feet deep (USGS, 1992).

The existing training areas are underlain by sedimentary bedrock, and have interspersed plutons throughout these areas. Water from these areas drains to the east and into the HVFAS. Several springs are located just north and east of the Fort area, in Section 17, T10N, R4W.

4.7.1.2 Surface Water

Regional surface waters include the Missouri River, Lake Helena and four principal streams that flow into the valley. Streams in the vicinity of Fort Harrison flow to the east. The closest principal stream is Tenmile Creek, which is located to the south of the training areas. Several smaller ephemeral streams also flow through the training areas and into Fort Harrison. The area receives little precipitation and there is seldom any runoff through the drainages and ephemeral streams (Martinka, 1996).

4.7.2 Quality

Analysis of groundwater samples indicate that water in wells completed in the HVFAS generally is a calcium bicarbonate type. Dissolved solids concentrations averaged 286 milligrams per liter (mg/L), which indicates hard water. Valley well water samples average a sodium-adsorption ration value of 5 or less, which indicates water with sodium levels suitable for irrigation. The median nitrate concentrations were 1.1 mg/L, whereas USEPA primary maximum contaminant level (MCL) for nitrates is 10 mg/L. VOCs, which may have resulted from equipment contamination during sampling and analysis, were found in some wells in very small concentrations (0.6 to 4.1 micrograms per liter (mg/L)). Pesticides were detected in only one sample in a very low concentration (0.44 mg/L of 2,4-D). In general, groundwater quality from the valley aquifer system is good (USGS, 1992).

Surface water quality in the area is not monitored on a regular basis, and unprocessed surface water is not used in the area except for irrigation. Drinking water at Fort Harrison is supplied by the city of Helena.

4.7.3 Pollution

Aquifers at Fort Harrison and the fractured bedrock in the training areas are susceptible to contamination, which could result from spills. However, activities in the base area include a very limited use of hazardous materials (e.g., fuel). These materials pose little threat of a spill only relatively small quantities of materials are used in any one vehicle. If a spill occurred, the impact to groundwater would not likely be significant, since any spill would be small and since the MT ARNG uses a spill response plan to mitigate spills. The dry climate of the area minimizes the potential for a spill to migrate.

Past activities involved the use of the training area for firing more types of and larger projectiles than currently used. Recent munitions have lead levels much reduced from previous munitions. The arid climate of the area minimizes the possibility of lead leaching from unrecovered ordnance and reaching the groundwater.

Surface waters can also be affected by spills or from soil erosion. Spills would not have an impact since little hazardous material is used and because the materials are

infrequently used, and because permanent surface waters are not located at the bivouac areas or along roads.

Soil erosion, which could result in air- or water-transported sediment, from training exercises is negligible. Vehicles are only driven on established roads, and foot traffic and wear on vegetated areas is monitored. When a bivouac area has been used for a certain period of time, a new area is designated. Surface water has been sampled and analyzed for lead, as well as other metals. No concentrations were above MCLs (Martinka, 1996).

There have been no significant impacts to groundwater or surface water resources from the use of the training areas.

4.7.4 Floodplain Areas

There are no areas of Fort Harrison that are in either the 100 year or 500 year floodplain.

4.7.5 Water Resource Districts/Water Rights

Does not apply at the Fort Harrison site.

4.8 BIOLOGICAL RESOURCES

Biological resources include the native and introduced plants and animals and the aquatic habitat in the region around Fort Harrison. This biological resources section is separated into four areas for discussion: vegetation; wildlife; sensitive, threatened, or endangered species; and wetlands. As part of a previous environmental assessment, a biological survey was conducted between May 6 and June 25, and from July 17 to 24, 1996. The survey included a foot reconnaissance as well as discussions with a wetland specialist from the Natural Resource Conservation Service and a botanist with the Montana Natural Heritage Program. The findings of this survey and additional baseline information are summarized in the following subsections.

4.8.1 Vegetation

Fort Harrison is located in the western foothills of the Rocky Mountain chain. The terrain is generally flat or moderately rolling on the eastern portion but on the western portion the terrain is dissected by gullies, ravines, and coulees. Fort Harrison consists primarily of grassland vegetation.

The most common grassland habitat found is bluebunch wheatgrass/western wheatgrass (*Agropyron spicatum/Agropyron smithii).* Other species commonly found include needle-and-thread (*Stipa comata),* prairie junegrass (*Koeleria cristata),* and Idaho fescue (*Festuca idahoensis*).

Four conifer species were identified on the acquisition parcel during the biological survey. These were Douglas fir (*Pseudotsuga menziesii*), limber pine (*Pinus flexilis*), ponderosa pine (*Pinus ponderosa*), and Rocky Mountain Juniper (*Juniperus scopulorum*).

4.8.2 Noxious Weeds

In 1995, the Montana Legislature recognized that noxious weeds threaten the biodiversity of the state and enacted HB 395 to address weed management plans on state-owned land. The MT ARNG recognizes the need for a noxious weed management plan and has taken initial steps to prepare a plan. This plan is being prepared under a separate effort and not within the Proposed Action of this EA.

The MT ARNG actively manages for noxious weed on all State and Federal lands used by the MT ARNG. Weed management is conducted annually with primary emphasis during the spring and summer months (typically late May through August). Fort Harrison currently has a local contract with a private company for aerial and ground spraying (truck application and some backpack spraying) of noxious weed. The numbers of acres sprayed each year varies; in 1996, 173 acres of Fort Harrison property were sprayed. In 1997, that acreage is expected to reach approximately 200 acres(Martinka 1997). Three species of noxious weed have been identified in the area. The three species identified were spotted knapweed (Centaurea maculosa), leafy spurge (Euphorbia esula), and dalmatian toadflax (Linaria dalmatica). Of these species, leafy spurge was the most common. This noxious weed was found in the upgradient portion of the wetland area. A mixture of Tordon 22k, 2,4-D Armine, and Transline is used to spray for noxious weeds on Fort Harrison.

4.8.3 Wildlife

Cattle owned by the RV Ranch graze over a portion of the Fort Harrison land. Wildlife in the vicinity consists of small mammals, rodents, and birds.

The biological survey found that elk are abundant in the area. Most signs of elk were from winter/spring use but some recent signs were also observed. The area serves as a winter range and as a travel corridor during certain months. Most elk use of the area occurs from December through April; however use is subject to local snow conditions (MT ARNG, 1995a). During most winters there are between 40 to 70 elk in the area (MT ARNG, 1996b).

An estimated 36 mule deer were observed on Fort Harrison during the May 1996 biological survey. All of the mule deer observed were moving freely in and out of the forested areas to the west of Fort Harrison. No mule deer were observed in the lower elevations and signs of the deer in this area were infrequent (MT ARNG, 1996b).

4.8.4 Sensitive, Threatened, Or Endangered Species

The Endangered Species Act (ESA) requires that any action authorized by a Federal agency shall not jeopardize the continued existence of a threatened or endangered (T&E) species or result in the destruction or adverse modification of designated critical habitat of such species. A listed species, provided protection under the ESA, is so designated because of danger of its extinction. Previous information provided by the U.S. Fish and Wildlife Service indicates that no species listed or proposed for listing as threatened or endangered, other than migrant bald eagles, are likely to occur within Fort Harrison (MT ARNG, 1995). During reconnaissance for the biological survey, no sensitive, rare, or threatened plant species were found, and no raptor nests were found in the area (MT ARNG, 1996b).

The Montana Natural Heritage Program database identified three species of special concern—the flammulated owl (Otus flammeolus), Westslope cutthroat trout (Oncorhynchus clarki lewsi), and gray wolf (Canis lupus)—within eight miles of Fort Harrison. Habitat for the flammulated owl is believed to be mature old-growth ponderosa pine forest with a Douglas fir understory (MT ARNG, 1996a). Nesting is in woodpecker holes or natural cavities. While Fort Harrison has not been surveyed for the flammulated owl, no habitat (old-growth pines) for the owl is known to exist. Cutthroat trout habitat is perennial streams or other bodies of water. Streams on Fort Harrison are intermittent and do not provide habitat for the cutthroat trout. The gray wolf is federally listed as endangered. Wolves have been documented approximately 15 miles west of Fort Harrison. Several unconfirmed wolf sightings have been reported within 5 miles of Fort Harrison. No sightings have been reported within the immediate vicinity of Fort Harrison (MT ARNG, 1996b).

The bald eagle (Haliaeetus leucocephalus) has been a protected species in the United States since the establishment of the Bald Eagle Protection Act in 1940. Bald eagles are now listed as a threatened species. The bald eagle winters along major rivers and reservoirs and has been seen in the Helena area. The bald eagle is considered a migrant through this area (MT ARNG, 1995).

A Threatened and Endangered Species inventory, specific to reptiles, amphibians and bats, was completed by the MT ARNG in 1997. No threatened or endangered species of those types were discovered (MT ARNG, 1998).

4.8.5 Wetlands

Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Federal Interagency Committee for Wetland Delineation, 1989). Wetlands are diverse ecosystems that provide ecological benefits by supporting commercial fisheries, controlling floods, filtering wastes from water, and serving as recreation areas. They also provide habitat for many plant and animal

species, including economically valuable waterfowl and one-third of the nation's endangered species.

Limited wetlands are known to exist on Fort Harrison. A recent biological survey (MTARNG, 1996b) identified two areas in an area recently acquired that could be considered as wetland areas. Site 1, located in the northwest quarter of Section 17, T10N, R4W, meets wetland criteria for soils and hydrology, but does not have the required 50 percent of facultative wetland or wetter vegetation. Site 2, located in the southwest quarter of Section 18, T10N, R4W, meets all three criteria needed to be designated as a wetland. The wetland includes all mature deciduous vegetation that surrounds the spring, and a portion of the drainage . The survey, although conducted by a wetland specialist from the Natural Resources Conservation Service, is not an official wetland determination. A Wetlands Survey is currently being conducted for the Fort Harrison site by the MT ARNG.

4.9 CULTURAL RESOURCES

Cultural resources include archaeological and historical items, places, or events considered important to a culture, community, tradition, religion, or science. An example of a scientific resource would be paleontological evidence: physical remains, impressions, or traces of plants or animals from a former geological age. Archaeological and historic resources are locations where human activity measurably altered the earth or left deposits of physical or biological remains. Prehistoric examples include arrowheads, rock scatterings, village remains, whereas historic resources generally include campsites, roads, fences, homesteads, trails, and battlegrounds. Architectural examples of historic resources include bridges, buildings, canals, and other structures of historic or aesthetic value.

The Helena Valley was first occupied by white settlers in 1864. Cultural resources found in the valley include remnants of mining, agricultural, ranching, military, and transportation activities.

4.9.1 Historical Significance

A Cultural Resources Management Plan (dated 1995/revised 1997) was completed for 48 facilities constructed during World War II at Fort Harrison. The purpose of the plan was to determine which of these facilities should be retained and preserved because of their historical value. Of the 48 structures surveyed, 15 were recommended for preservation and the remaining 33 were recommended for demolition (MT ARNG, 1996).

4.9.2 National Register Of Historic Places Eligibility

The Montana Army National Guard has a Cultural Resources Management Plan(CRMP) that was prepared for the Fort Harrison complex. As part of the provisions of that plan, the Guard has appointed a Historic Preservation Plan

Committee who is responsible for administration of the CRMP. Any action on the base that would result in a negative impact on historic structures on the base must first be cleared by the HPP Committee and the State Historic Preservation Office. Coordination with SHPO is discussed in paragraph 4.9.4.

At this time, no facilities on base have been designated as being eligible for listing on the National Register of Historic Places.

4.9.3 Archeological Resources

An Archaeological Phase I Survey was conducted for the acquisition parcel, and a report was prepared (MT ARNG, 1996d). The field work was accomplished from June 24-28, 1996. This survey commenced with a review of cultural resource files at the University of Montana, Department of Anthropology, Archaeological Records Office (Missoula), and the Montana State Historic Preservation Office in Helena.

Results of the field work for the Archaeological Phase I Survey recorded and evaluated five historic sites. No prehistoric sites were identified. The historic sites located are associated with 1880- to 1900-era mineral exploration and claims. These sites lack intact structures, association with important historic patterns, events, or persons, and have no subsurface components which could provide important information. There is little or no record of production for these claims. None of these sites are considered eligible for the National Register of Historic Places (NRHP) (MT ARNG, 1996d).

There were 71 historic isolated finds recorded during the Phase I Survey. Most of these isolated finds are prospect pits associated with mineral exploration. These finds lack specific temporal context, but may be from as early as 1880 to modern in age. Isolated finds are not eligible for the NRHP (MT ARNG, 1996d).

Two previously recorded sites in the area were also located and reevaluated. One of the two sites, the Blackfeet Road, passes along the north edge of the parcel. This site is currently used as a county road and is not eligible for the NRHP. The second site was previously interpreted as a possible cavalry guard post associated with Fort Harrison. This interpretation was based on the presence of military issue dishware and silverware found at the site. The estimated occupation of this site is 1885; this precludes the possibility of Fort Harrison involvement since Fort Harrison was not established until 1895. It is likely that the prospects were visited by soldiers after 1985, because of its proximity to the fort, and that the military dishware found there is a result of this association. No record of a military facility was found at this location. This site is not eligible for the NRHP (MT ARNG, 1996c). These two sites were not considered eligible for the NRHP because they lack intact structures, association with important historic patterns, events, or persons, and have no subsurface components that could provide important information.

4.9.4 Coordination With SHPO

During scoping process for this EA, a letter was sent to the Montana State Historical Preservation Office(SHPO)that requested their input as to the potential for impact to cultural resources. The agency response requested that the EA needed to include a discussion on how the MT ARNG intends to comply with Section 106 of the National Historic Preservation Act, as amended, and codified in 36CFR800.

The Cultural Resources Management Plan that was prepared for Fort Harrison in 1995 and amended in 1997 essentially was created specifically to establish a clear direction for compliance with Section 106. A copy of that document is being forwarded to SHPO for their review and comment, outside the scope of this EA.

Subsequent to SHPO review of the CRMP, additional contact with SHPO has provided direction to MT ARNG for the identification of historic properties under Federal control and methods for removal or demolition if the need should arise. A summary of that discussion is included in paragraph 2.2 Building Demolition.

The MT ARNG will continue to work with SHPO and the Lewis and Clark County Historical Society on all proposed actions at Fort Harrison that affect cultural resources.

4.9.5 Programmatic Agreements With The State

None, related to Cultural Resources.

4.10 SOCIOECONOMICS

Fort Harrison is located 3 miles west of Helena, Montana. The city of Helena and Fort Harrison are located within the boundaries of Lewis and Clark County, which is defined as the region of influence (ROI) for this analysis. The area is shown in Figure 4A.

Socioeconomic resources are described in this section using employment, income, and demographic measures, and a discussion of local government revenues. These elements are the key factors influencing housing demand, real estate prices, education needs, other community services, and infrastructure requirements. However, the proposed actions under consideration in this document do not include personnel changes at Fort Harrison. Therefore, the socioeconomic resource areas that are typically affected by personnel changed - the local real estate market, schools, community services, and infrastructure - will not be discussed in this document. The latest available data that are reliable, and consistent with earlier data, are used in the discussion.

4.10.1 Demographics

Population growth in Lewis and Clark County during the 1980s was much stronger than growth for the state of Montana. The county increased by 10.4%, at an average annual rate of 1.0%, while Montana grew by only 1.3%, an average annual rate of 0.1%. By comparison, the U.S. increased by 9.4%, an average annual rate of 0.9%. Between 1990 and 1995, however, population growth for both the county and the state was dramatically higher than the 1980s rates and the U.S. average. Lewis and Clark County grew at an annual growth rate of 2.1%, for a total increase of 11.1% during the five-year period, while Montana's average annual growth rate was 1.7%, yielding a total increase of 8.9% in population. During the first half of the 1990s, the U.S. population increased at an average rate of 1.1% per year, for a total 5-year increase of 5.6%. Lewis and Clark County had a 1995 population of nearly 53,000 (U.S. Bureau of the Census, 1990). According to a representative of the Helena Area Chamber of Commerce (Nunn, 1996), population migration into the community is continuing, spurred by economic growth and the quality-of-life amenities available in the Helena area. Most new residents are relocating from other western states, with the states of Washington and California contributing the greatest numbers.

4.10.2 Regional Economic Activity

Lewis and Clark County experienced moderate employment growth during the 1980s, with employment increasing by 14%, compared to 9% for Montana as a whole and 22% for the United States. However, between 1990 and 1993, employment for both the county and state increased by approximately 10%, with average annual growth rates that were about triple the annual rate during the 1980s. These 1990-1993 growth rates are noticeably higher than that of U.S. employment, which increased by 1.2% total (an average annual rate of 0.4%). Total employment in Lewis and Clark County was approximately 32,300 in 1993, the latest year for which comparable employment data are available (U.S. Bureau of Economic Analysis, 1996).

Lewis and Clark County has a moderately diversified economy, with a high proportion of employment in the services sector, which accounts for almost one-third of all employment. Helena is the state capital and home of several Federal facilities and regional offices, and the government sector accounts for more than a quarter of county employment. Wholesale and retail trade employ 20 percent of the labor force, while the remaining sectors are quite small (U.S. Bureau of Economic Analysis, 1996). These proportions are illustrated in Figure 4F on Page 4-34.

In 1995, unemployment for Lewis and Clark County averaged 5.1%, while the state average was 6.8% and the U.S. average was 5.6%. However, unemployment had declined for both the county and the state by May of 1996, when the rates were 4.1% and 5.1%, respectively; the U.S. rate remained at 5.6% (Montana Dept. of Labor and Industry, Research and Analysis Bureau, 1996).

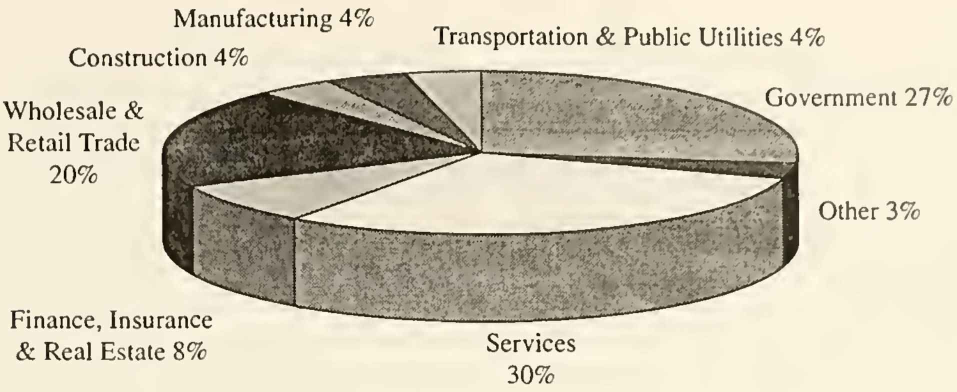

Figure 4F - 1993 Employment by Industry Sector

4.10.3 Installation Salaries And Local Expenditures

There are approximately 170 full-time employees at Fort Harrison and 65 full-time employees at the AASF, constituting less that 1 percent of the county's total employment. There are also approximately 350 MT ARNG members at Fort Harrison and 250 at the AASF; most of these part-time Guard employees live in the Helena area and have full-time jobs in addition to their Guard membership. On a typical monthly drill weekend, there are from 300 to 400 soldiers at Fort Harrison for training activities. In addition, other units use the ranges and other facilities at Fort Harrison for training; these occasional users are from outside the Helena area. Weekend users stay at Fort Harrison rather than lodging in Helena motels (Martinka, 1996).

Total personal income in Lewis and Clark County was $937.3 million as of 1993. Per capita income (PCI) for the same year was approximately $18,470, roughly 89 percent of the United States average PCI and 106 percent of the Montana average (U.S. Bureau of Economic Analysis, 1996).

4.10.4 Housing

Construction growth in the Helena area, as estimated by the dollar amount of the building permits issued by the City of Helena, more than doubled from 1990 to 1995, from $17.7 million to $31.7 million, then declined by 18 percent to $25.9 million in 1995. The overall increase of 67 percent in permit value between 1990 and 1995, as shown in figure 4.10.2, is further evidence of the strong growth occurring in the Helena area (City of Helena Building Department 1996).

4.10.5 Schools

The Helena School District has two high schools with an enrollment of 2,603 students, two middle schools with a total of 1,780 students, 12 elementary schools with a total enrollment of 3,730 students and many pre-school, kindergarten, gifted, special education and adult education programs.

Post Secondary Education opportunities are provided at the Helena College of Technology, a 1,000 student school affiliated with the University of Montana; Carroll College, a private 1,500 student college that specializes in a pre-medical program and the Helena Vocational Technical Center which offers 12 programs for approximately 550 students in office and business management, the trades and industry and technical training. (Helena Chamber of Commerce/1997)

4.10.6 Medical Facilities

St. Peter's Hospital is a 90 bed, acute care hospital that offers a 24 hour emergency room, ambulance service and a full range of home-care services. Shodair Children's Hospital provides specialty care with children's psychiatric and genetic services. The Veteran's Administration Hospital adjacent to Fort Harrison is a 113 bed general and surgical facility. There are more than 130 physicians in Helena and about 35 dentists. (Helena Chamber of Commerce/1997)

4.10.7 Shops And Services

As the Capitol of Montana and a regional shopping center for west/central Montana, Helena offers all types of shops and services. One major shopping mall and several smaller malls supplement the individual retail establishments on the major transportation routes and downtown area. Nearly 100 restaurants are listed in the local phone book yellow pages, including all of the national fast food chains and many local specialty restaurants.

4.10.8 Recreation Facilities

The Helena area has four year-round and 2 summer swimming pools and many wading pools. On the City's edge lies a 20-acre Spring Meadow Lake, a water and land recreation area.

The Helena area has over 25 city parks. The largest, Mt. Helena Park, offers miles of hiking trails just a few blocks from downtown. Opportunities for individual sports - running, aerobics, weight training, equestrian, ice skating, roller skating, bowling and more are practically unlimited.

Helena has two public golf courses and one private golf course, 17 pubic tennis courts and four membership health clubs.

Helena is home to the Helena Brewers, a minor league baseball affiliate and the Helena Ice Pirates, a hockey team. (Helena Chamber of Commerce/1997)

4.10.9 Public Health And Safety

The City of Helena is served by 43 full time police offices and 33 full time firefighters(March 1995). There are 16 police officers per 10,000 population. The County employs 25 full time sheriff's deputies and there are approximately 500 volunteer fire fighters in the County. (Helena Chamber of Commerce/1997)

4.10.10 Environmental Justice

Executive Order 12898 (11 February 1994) has directed that all proposed actions by federal agencies that required NEPA documentation be examined for potential adverse human or environmental effects on minority and low-income populations. This Executive Order:

- Requires federal agencies to identify disproportionally high adverse human health or environmental effects of it's programs, policies, and activities on minority and low-income populations
- promotes greater public participation of low-income and minority groups in federal programs related to health or the environment
- promotes enforcement of all health and environmental statues in geographic areas with low-income or minority populations
- promotes the identification of differential patterns of consumption of natural resources among low-income or minority populations
- promotes improved research and data collection relating to the health and environmental conditions of low-income or minority populations.

The 1990 Census found that Lewis and Clark County's population was nearly 97 percent Caucasian and 2.2 percent Native American, with African-American, Asian, and Other comprising less than 1 percent of the total; 1.2 percent are considered Hispanic, which can be any race. By comparison, Montana's population is nearly 93 percent Caucasian and 6 percent Native American, with 1.5 percent considered Hispanic. Less than 12 percent of the county's population are below the poverty level, while 16 percent of the state's population fall into this category (U.S. Bureau of the Census, 1990).

4.11 INFRASTRUCTURE

The most recent Utility Master Plan for the Fort Harrison complex was completed in 1987 by Thomas, Dean & Hoskins. The following narratives are taken largely from information in that document and follow up conversations with base personnel.

The base is currently preparing updated information on both the water and waste water systems at the base via a separate contract so the following discussion is limited and should be supplemented by the updated information, when available.

4.11.1 Potable Water

Water is currently supplied to the Fort Harrison complex by the City of Helena via an 8" main connected to the City system approximately ½ mile south of the cantonment area. A second 8" main connects the Guard system to the VA water system although this connection is valved off and would only be used in case of an emergency. Current water pressure supplied by the City system is 150 psi.

The existing system does not have on-line storage capacity although the VA system does have a 500,000 gallon storage tank that is available for use during an emergency. The system distribution is via 6" and 8" cast iron or steel pipe. The system is valved and has hydrants to provide fire protection.

Deficiencies noted during the preparation of the Master Plan included Fire Hydrants on undersized mains, inadequate valving, outdated hydrants, lack of storage and deterioration of the distribution system.

4.11.2 Wastewater Treatment

The existing sanitary sewer system consists of 8" laterals and a 12" trunk line. Treatment occurs in two 5 acre lagoons. The trunk lines and lagoons were built by the Veterans Administration approximately 30 years ago and are used jointly by the MT ARNG and the VA.

In the 1987 Master Plan, it was concluded that the existing system, even after expansion of the Guard activities to bring the unit to a 1,000 man capacity, was sufficient to handle current loads at that time, and projected increases. The capacity was noted to be over twice the projected demand. The only deficiency noted in the earlier study was the spacing of manholes.

4.11.3 Storm Water System

There is currently no underground storm drainage system at the Fort Harrison complex. All storm drainage is handled via the use of open ditches. Two major drainages cross the complex in the east-west direction. Calculations from the earlier master plan indicated that several of the culverts diverting this runoff under roadways were undersized and all future culverts should be a minimum of 18" diameter.

The master plan also noted that Lewis and Clark county recommends on-site detention of storm water for any runoff in excess of historical runoff. At that time, the County did not have specific requirements and negotiated the quantity of detention volume on a case by case basis, based on land area disturbed, building plans, and asphalt/gravel parking areas proposed.

4.11.4 Solid Waste Disposal

Most base and training activities generate solid waste. Solid waste generated during field training and at Fort Harrison is collected and disposed of through a contract or is recycled. There are no operating landfills on the base; solid waste is sent to the Helena Transfer Station. Fort Harrison recycles paper, cardboard, and packing materials, and maintains data on recycling under DMAMT Regulation 200-8. An estimated 10 tons of mixed paper and 10 tons of cardboard are recycled annually (MT ARNG, 1997). Metals are also segregated and turned into DRMO. An estimated 1,000 pounds of shells and spent practice munitions are recovered each month (including materials from the Limestone Hills training area).

4.11.5 Natural Gas

Natural gas service to the complex is provided by Montana Power Company. Natural gas accounts for nearly 50% of all energy usage on the base according to information contained in an energy audit of the site performed in 1996.

4.11.6 Electrical Service

Electrical service to the complex is provided by Montana Power Company. Electricity accounts for slightly over 50% of all energy usage on the base according to information contained in an energy audit of the site performed in 1996. Each building on base is separately metered.

4.11.7 Transportation System

Currently the Fort area is access via two routes. The first, Country Club Drive, approaches the site from the southwest on a County Road. The second, is also a County road that approached from the south off via US Highway 12. No other roadways access the site.

4.11.8 Rail Service

Rail access for freight is provided from the north on a rail spur maintained by Montana Rail Link. This spur provides service to the northern part of the site only and does not continue into the main part of the complex.

4.11.9 Air Operations

All air operations to the site originate at the Army Aviation Support Facility located at Helena Regional Airport. No private air operations are allowed in the airspace above the military complex.

4.12 HAZARDOUS AND TOXIC MATERIALS/WASTES

The environmental programs at Fort Harrison include hazardous materials, hazardous waste, the Installation Restoration Program (IRP), solid waste, and wastewater. Although other programs are also managed by the MT ARNG Environmental Office (support from other offices occurs with several programs), the aforementioned programs are the ones potentially affected by the proposed Action and will be addressed in this document. All programs are managed in accordance with applicable Federal, state, local, and DoD regulations, standards, and laws. Current MT ARNG activities are being properly managed under programs for hazardous materials, hazardous wastes, solid wastes, and wastewater. The IRP addresses sites that have resulted from past activities.

Hazardous material use has been greatly reduced in recent years by the MT ARNG. An emphasis on material reduction and changed shop practices have lowered the number of types of hazardous materials from over 200 items to less than 70 items. Quantities used have also decreased by an average of 60 percent for all MT ARNG locations (MTDMA, 1995).

Overall MT ARNG hazardous waste quantities have decreased by about 80 percent since 1993—the established baseline year. A 90-percent reduction from 1993 was projected for the end of 1996. The decrease has occurred as a result of implementing pollution prevention initiatives (MTDMA, 1995). For example, procedural changes have resulted in sump sludge being disposed of by landfarming, and fuels being removed from the waste stream by blending and using fuels in the MT ARNG energy recovery program. New equipment, such as filtration and hot water parts washers, are reducing waste quantities. Finally, the use of substitute products, such as rechargeable batteries, are also reducing the amount of hazardous waste generated.

These changes have reduced the impact of changing or new operations as well as existing operations. The small quantities of waste that are generated by the MT ARNG (e.g., from maintenance of vehicles or cleaning of equipment) would be reduced. Because little waste is generated from the activities (i.e., Fort Harrison is a small quantity generator, and the training areas are very small contributors), there are no significant issues associated with the current hazardous waste program.

The six IRP sites that have been identified are located away from the training areas. Activities that could disturb the sites are identified before those activities (e.g., trenching) are initiated, and the sites are not disturbed. Based on the results of the 1994 Site Inventory, it was determined that further investigation of these sites was not necessary. The IRP program is not impacted by existing activities.

4.12.1 Hazardous Materials

Hazardous materials are substances that, because of their quantity, concentration,

or physical, chemical or infectious characteristics, may present a substantial danger to public health or the environment if released. These materials are defined within certain laws to have specific meaning. For this document, substances identified as hazardous by the Occupational Safety and Health Act are considered hazardous materials. Examples of hazardous materials used by the MT ARNG are fuels, oils, cleaning solvents, paints an thinners, and munitions.

Most of the hazardous material used by the MT ARNG is fuel. Diesel fuel is the only fuel stored on Fort Harrison. All gasoline is purchased in Helena with US Government credit cards, there is no gasoline storage on Base. The diesel is stored at the Unit Training Equipment Site in two above ground double walled tanks. Diesel is dispensed through pumps and detailed record of the input/output is monitored. All Fort Harrison diesel is received via commercial trucks. Fuel spill kits are kept on site for rapid response to any type of spill. (MT ARNG/Reynolds, 1998)

Other hazardous materials, excluding munitions, are managed under the Department of Military Affairs—Montana (DMAMT) Regulation 200-8, Pollution Prevention Program, which emphasizes reductions in on-hand stocks.

The MT ARNG has an Oil and Hazardous Substance Spill Prevention and Response Plan that is reviewed and updated annually. This plan provides for contingency planning and spill preparedness, and is designed to prevent, limit, and respond to any spills.

4.12.2 Hazardous Waste

The use of hazardous materials can, in turn, create hazardous wastes. Hazardous wastes, as defined for this document, include those substances identified by the Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Superfund Amendments and Reauthorization Act (SARA), and subsequent amendments. These substances would include, for example, used solvents or paint wastes. Fort Harrison is designated as a small quantity generator (EPA ID# MT8211830080). The total MT ARNG waste stream in 1996 was 1,327 pounds (MT ARNG 1997).

Management of hazardous wastes consists of collection, storage, transportation, and disposal as required by RCRA, Montana Hazardous Waste Regulations (Montana Code Annotated Title 16, Chapter 44, Section 101 et seq), and DMAMT Regulation 200-1.

All records and tracking documents are maintained at the initiating facility, as well as by the Environmental Office. Comprehensive training is accomplished by the Hazardous Waste Manager of the Environmental Office and is available to all personnel. The environmental coordinator at the AASF is the installation accumulation point manager for a RCRA-permitted storage facility at the AASF. Hazardous wastes are disposed of through the Defense Reutilization and Marketing Office (DRMO) in Great Falls, Montana.

SECTION 5

5.0 ENVIRONMENTAL CONSEQUENCES

This section discusses the potential for significant impacts to the human environment that could result due to the implementation of the Proposed Action(s), the Alternative Action(s) or the No Action Alternative(s). A discussion is provided for each of the environmental and socioeconomic resource areas that are described in Section 4.

As defined in 40 CFR §1508.14, the human environment is interpreted to include natural and physical resources, and the relationship of people with those resources. Accordingly, this analysis of the projects has focused on identifying the types of impacts and estimating their potential significance.

The concept of “significance” used in this assessment includes consideration of both the context and the intensity or severity of the impact, as defined by 40 CFR § 1508.27. Severity of an impact could be based on the magnitude of change, the likelihood of change, the potential for violation of laws or regulations, the context of the impact (both spatial and temporal), degrees of adverse effect to specific concerns such as public health or endangered species, and the resilience of the resource.

If a resource is not affected by existing activities or would not be affected by a proposed activity, a finding of no impact was declared. If a resource has been measurably improved by existing activities or would be measurably improved by a proposed activity, a beneficial impact is noted. If the proposed activity has a detrimental impact on a resource, a negative impact is noted.

Generally, the nature of the impacts created as a result of the projects covered under this EA fall under two primary headings; short-term impacts that will occur during the actual construction of the facilities and long-term impacts that will occur over the life of the building/project.

For reasons stated in Section 3, Alternative Actions for projects in Action Group 3 and projects 4A and 4C in Action Group 4 were screened out early in the EA process. To avoid duplication and redundancy, a discussion of the lack of an Alternative Action being proposed for projects 3A, 3B, 3C, 4A and 4C is not provided in the following narratives.

5.1 LOCATION

The Proposed Action(s), the Alternative Action(s) and the No Action Alternative(s) elements will all occur on or adjacent to the existing Fort Harrison complex with the exception of the Alternative Actions for projects 2C and 2D which will involve work at other existing federal sites in Montana. Refer to Appendix B, Drawing B2 for a graphic showing the location of the Proposed Action(s).

5.1.1 Potential Impacts Of The Proposed Action

No additional land acquisition is necessary to accommodate the objectives of the projects involved in this EA. For the most part, the projects are in support of the existing mission, with no expansion of personnel involved. The two main facilities that will be constructed on site involving relocation of personnel are the Armed Forces Reserve Center and the Naval Reserve Center. In both of those cases, the Proposed Action(s) result in a consolidation of personnel from both on-site and off-site locations that will result in an increase in efficiency of the operations and training activities associated with those facilities.

There would be no adverse impacts to Fort Harrison operations due to the proposed Action(s). Action Group 1 projects simply provide storage space in support of the current mission. Action Group 2 projects deal with upgrades to existing training facilities and consolidation of other Guard facilities current located both on the Fort Harrison Site and elsewhere in the State. Although those facilities will result in an increase of personnel on site, they will not cause any significant increase in ground operations. Action Group 3 projects deal with upgrades to existing ammunition storage areas and firing ranges that will provide a beneficial impact as a result of the improved safety for both training personnel and surrounding private residents. Action Group 4 projects deal with site improvements to the existing base area that will not result in any additional personnel or ground operations. With the exception of Action Item 4D, current flight operation training levels would be maintained at the same level of activity and this action will result in only 1 additional flight per week using the new helicopter landing pad(Martinka 1997) thus creating no significant impact to existing aircraft operations.

5.1.2 Potential Impacts of the Alternative Action

The impact on the 'Location' criteria presented by the Alternative Action(s) varies depending upon the Action Group. The Alternative Action(s) for Action Group 1 and projects 2A and 2B in Action Group 2 call for the 'projects' to be constructed in different locations than the Proposed Action(s), but still on Fort Harrison, so using the rationale presented in 5.1.1, there is no significant impact. Under the Alternative Action scenario projects 2C and 2D would upgrade or expand sites remote from Fort Harrison and thus there would be no impact on the Fort Harrison 'location'. Because of the minimal scope of projects 4B and 4D, the Alternative Actions would have no significant impact on the 'Location' criteria.

5.1.3 Potential Impacts Of The No Action Alternative

With a renewed Federal focus on downsizing of active duty military forces and their respective military bases, an increased responsibility for National Defense is being assumed by National Guard forces, such as those that train at sites like Fort Harrison. This increase in responsibility is being recognized by the Federal Government in the form of increased funding for development projects at bases that

will provide improved training opportunities, such as those being proposed in this EA. The potential for loss of training, if the anticipated projects were withdrawn from consideration, would have an adverse and significant negative impact on the U.S. Army and other Federal agencies in their ability to train personnel at this site.

5.2 LAND USE

Impacts to land use on Fort Harrison and adjacent properties from existing activities are insignificant. Because the majority of the projects involved in this EA are in support of the existing mission and do not involve the addition of new personnel to the site, the Proposed Action(s), the Alternative Action(s) and the No Action Alternative(s) would also have an insignificant impact on land use.

Potential impacts would be considered significant if adjacent land use or sensitive receptors were exposed to additional noise levels, if land values of adjacent properties were adversely affected, or if existing activities on adjacent properties were curtailed. Impacts would be considered insignificant if there is little or no change in the use or value of land adjacent to Fort Harrison as a result of the Proposed Action(s) or Alternative Action(s).

5.2.1 Potential Impacts Of The Proposed Action

The Proposed Action(s) would not impact land use adjacent to Fort Harrison, but would ensure that land use (military operations) on Fort Harrison would remain the same and in the case of the projects in Action Group 3, would actually increase the safety of both on-site and adjacent land areas. Impacts to sensitive receptors would be the same as those for existing activities

Projects involved in Action Group 1 provide the ability for a more efficient use of the land area as more organized storage facilities become available. By providing indoor storage for Guard equipment and supplies, the potential for contamination of the site in decreased as these items will be protected from the rain and other natural elements. Project 1F, the Wash Rack, provides additional benefit as it helps to control POL contamination of storm water runoff off site.

Action Group 2 projects are all being placed on site according to the overall base development plan and thus have no negative impact on land use. Action Group 3 projects will increase the efficiency of the existing land use by updating outdated facilities/ranges. Action Group 4 projects are focused on improving existing site conditions by improving site drainage and other physical site features.

Because operations would be unchanged, no detrimental impact is expected to land values for adjacent property.

5.2.2 Potential Impacts of the Alternative Action

Impacts from both construction and continued operations on Land Use based on the Alternative Action(s) would be as described in Section 5.2.1.

5.2.3 Potential Impacts Of The No Action Alternative

The primary impact of the No Action Alternative would be a decreasing ability for the Guard to provide adequate training opportunities for the personnel using this facility and the possibility that some or all of the proposed projects would have to be constructed at remote locations.

The No Action Alternative for the projects in Action Group 3 and project 4A would create a negative impact on adjacent land use.

5.3 AESTHETICS AND VISUAL RESOURCES

5.3.1 Potential Impacts Of The Proposed Action

The proposed projects contain many elements that would increase the aesthetics of the Fort Harrison area. Initially, the projects contained in Action Group 1 all deal with storage and support facilities for the existing mission. The materials and equipment that will be stored in those facilities are currently stored outside. These facilities will allow that material to be stored indoors, under cover which will help to consolidate those materials and eliminate the visual clutter that currently exists. Action Group 2 projects will provide new, modern facilities which will be designed to complement the existing base facilities and architecture. Action Group 1 projects and project 2B also require the removal of existing outdated and unsightly existing buildings which will improve the overall visual impact of the Base. Action Group 3 and 4 projects have little impact on aesthetics, with the exception of project 4C which is designed to enhance the image of the base by providing additional landscaping at the two main entries.

5.3.2 Potential Impacts Of The Alternative Action

There would be a slight negative impact based on the Alternative Action(s), primarily for Action Group 1 projects, as the existing buildings proposed to be removed would remain on site. Visually, because these buildings have not be usable for many years, they are run down and do not present the best ‘face’ for the installation.

5.3.3 Potential Impacts Of The No Action Alternative

Other that the continuation of the status quo with respect to outdoor storage of materials and equipment, there would be no significant aesthetic or visual impact to the Fort Harrison area as a result of the No Action Alternative(s).

5.4 AIR QUALITY

Based on the analyses described in Section 4, the ongoing MT ARNG operations and use of the training parcels have minimal impacts on air quality in the Helena area. Air quality would not be impacted as a result of either the Proposed Action(s) or Alternative Action(s). Likewise, the No Action Alternative would have insignificant air quality impacts.

An air conformity determination is not needed for the ongoing or proposed MT ARNG activities. The emissions from MT ARNG activities would not affect the non-attainment area near East Helena, and would not affect the current attainment classification of the surrounding region.

The significance of impacts to air quality is based on Federal and state pollution regulations and standards. A violation of the NAAQS or MAAQS (see Table 4C) would be a significant impact. Excessive or frequent exposures of sensitive receptors to increased pollutant concentrations, due to high emission rates or proximity to a source, would be another significant impact. Any reduction of visibility at a Class I area could also have a significant impact. A beneficial impact to air quality would be a reduction in baseline emissions.

There is some dust (including PM_{10}) generated by training and road maintenance. The quantity of dust emissions from operations is related to the number of vehicles being used, the level of activity, the conditions of the roads at the time of the operations, and road maintenance conducted. Most activity occurs during dismounted infantry training, with up to 120 personnel training once per month. Vehicles are only used for transporting personnel to the training area, then remain on existing roads. Assuming a dry condition, five miles per day, ten trips, and a dust emission factor of 0.135 pounds/vehicle mile traveled (USEPA, 1995), the maximum amount of emissions from fugitive dust is about seven pounds per month during peak operations. Persistent winds during most of the year also provides for a good dispersion of air pollutants, and these emissions are insignificant. The activities have a minimal impact on atmospheric opacity. Degradation of visibility at PSD Class I areas does not occur, due to the limited emissions and the distance from Fort Harrison to a PSD Class I area (e.g., the Gates of the Mountains Wilderness Area is 20 miles distant).

Overall amounts of criteria air emissions can be substantial. For example, No_x emissions from MT ARNG helicopters can exceed 20 tpy (MT ARNG, 1992; US Army, 1993). However, these emissions are distributed throughout the entire area, with most emissions occurring in the vicinity of the Helena airport. The quantities of emissions in the training area depends upon flight time, height of operations, and weather conditions. Estimated emissions (assuming that 10 percent of all flight operations would occur at ground level in the training area), are about 330 pounds of No_x per month. This amount of No_x is not significant.

Personal travel by the MT ARNG personnel (i.e., privately owned vehicle mileage) also does not significantly increase any criteria pollutant. Using an average of 5 miles of travel per day, 170 full time personnel, all calculated emissions based on travel in the training area are negligible. For example, No_x emissions from personnel travel total 0.18 tpy. Any pollutants disperse to well below ambient air quality standards, as measured at monitoring stations. Existing quantities of criteria air pollutants are not significant; the total of all actions by the MT ARNG would need to be 100 tpy to be considered significant.

There would not be an impact on any nearby sensitive receptor. Sensitive receptors are located 0.5 mile to 1.0 mile from the training site. Criteria pollutants, as described, would be minimal, and only minor quantities of HAPs are generated by the MT ARNG. For example, miscellaneous units/sources of HAPs at Fort Harrison generate 0.00236 tpy (MT ARNG, 1996e) or about 0.4 pounds per month. The major source of HAPs, a paint booth which generates 8.78 tpy, would not be affected. Adding a generator or additional minor cleaning of weapons in the field would not increase the 0.4 pounds of HAPs per month. The natural dispersion of the pollutants, due to the winds and atmospheric turbulence, would also keep HAPs from reaching any sensitive receptor.

No ODSs would be used as a result of the Proposed Action(s) or Alternative Actions(s); DMAMT Regulation 200-8 mandates the elimination of most ODSs and they are currently being replaced by non-hazardous substitutes as they become available.

5.4.1 Potential Impacts Of The Proposed Action

The potential impact to air quality may be short-term or long-term. Short-term impacts are associated with construction activity, while long-term impacts correlate with MT ARNG operations after completion of construction activities.

Short term, air quality in the Fort Harrison area would not be changed noticeably by the proposed projects. During construction, there will be some incidental dust and construction related emissions on a temporary basis. Historically, these type of emissions are non-intrusive and very brief. The most noticeable construction related air quality issue is dust, which can be mitigated by the contractor by the proper watering methods. Burning of construction debris will not be allowed on site.

Long term air quality impact will deal primarily with the emissions from the new facilities due to fuel consumption and building exhaust systems. The primary fuel sources are expected to be either natural gas or electricity, both of which are 'clean' fuels and will result in no significant air quality deterioration.

5.4.2 Potential Impacts Of The Alternative Action

Impacts from construction and operation would be the same as described in Section 5.4.1.

5.4.3 Potential Impacts Of The No Action Alternative

Air emissions would continue to occur at the existing levels if the projects involved in this EA are not implemented.

5.5 NOISE

This section evaluates the significance of the potential change in the noise environment that would result from the Proposed Action(s) or Alternative Action(s). The impacts are related to the magnitude of the noise levels that would b generated by the construction and the operations of the facilities and the proximity of noise-sensitive receptors to the noise source. A noise-sensitive receptor is defined as the occupant of any facility where a state of quietness is a basis for use.

The basis for determining the significance of the impact is primarily the difference between the baseline noise environment and that of any changes. An appreciable increase in the background noise levels in the training areas (approximately 30 L_{dn} to 50 L_{dn}) would be perceived as an annoyance impact. Increases in time-average sound levels from ambient noise levels by more than 5 dBA would be clearly noticeable (changes in 3 dB are usually perceivable to the average person) and represent a significant adverse impact.

The Proposed Action(s) and Alternative Action(s) would result in an estimated one additional helicopter flight per week and an increase in the daily personal vehicle traffic to and from the site primarily due to the construction of the new Armed Forces Reserve Center. The cumulative effect of the Proposed Action(s) and Alternative Action(s) would cause no significant impact to noise levels in the area.

5.5.1 Potential Impacts Of The Proposed Action

The projects contained in this EA will contribute insignificant impacts to existing activities as they pertain to noise. Current helicopter flights do not account for any significant noise in the Fort Harrison area as there are few noise complaints (currently only 4 in 1997, not specifically due to AASF traffic) concerning the helicopters in and around the entire Helena area. Most local people around the area are accustomed to seeing and hearing the helicopters flying so the annoyance level is minor. Based on noise complaints and knowledge of receptors in the training areas adjacent to Fort Harrison, pilots from the AASF establish flight paths that avoid potential problem areas. Helicopters flying at 1,000 feet above the ground level generate SELs in the 85 to 90 dBA range. Noise from existing flights in the Fort

Harrison training area do not significantly affect the environment and only one additional flight per week is involved with this EA.

Noise is also generated from discharging weapons in the training area. As discussed in Section 4.5, compatibility zones have been established at the training areas based on noise levels. Development is limited based on the magnitude of noise within a zone. Current complaints from adjacent property owners regarding use of the weapons ranges are negligible. Consequently, no significant noise impacts for use of the firing ranges has occurred.

5.5.2 Potential Impacts Alternative Action

Impacts for both short-term/construction and long-term/operations would be the same as described in Section 5.5.1.

5.5.3 Potential Impacts Of The No Action Alternative

There would be no change in baseline noise conditions surrounding the base under the No Action Alternative. Noise levels experienced by sensitive receptors would remain the same.

5.6 GEOLOGY AND SOILS

Impacts to geological resources would occur on both a short term basis, from disturbances caused by construction activities, and a long term basis from continued operations of the facilities included in this EA.

For this analysis, an impact was determined to be potentially significant if a regional or local resource is depleted, if a major geological hazard were affected, or if a substantial increase in the rate of erosion or a major change in the characteristics of the soil would occur. Adverse impacts would be insignificant if the area of potential impact is slight (not bearing on the relevance, importance, or level of concern for the resource in the effected region). Beneficial impacts would occur if the action offsets a hazard or restores the resource.

The results of this analysis indicate that adverse but insignificant impacts to the geology/physiography or seismicity would occur from the Proposed Action(s). Soils and minerals would be insignificantly affected. Direct impacts would be caused by physical disturbances, such as site preparation during construction. Impacts from short term construction activities and from long term operations, with mitigation, would be insignificant.

5.6.1 Potential Impacts Of The Proposed Action

5.6.1.1 Physiography/Geology

This construction activity and long term usage of projects proposed in this EA would be shallow in nature and with appropriate mitigation would not adversely impact the physiography or geology of this area.

5.6.1.2 Soils

During the construction of the facilities proposed in this EA, soils would be temporarily disturbed, causing a short-term insignificant impact. Project 4A is a water collection and diversion project that would actually reduce enhance current site drainage and reduce soil erosion that is currently a problem on base. Training activities would not appreciably change under the Proposed Action(s). Vehicles would be limited to existing roads. Helicopter training flights would continue in the area. The amount of soil disturbed by rotor wash (wind currents generated by the rotors) due to one additional flight each week would be insignificant. Other activities under the Proposed Action(s) would not cause any significant erosion or change in soil properties.

5.6.1.3 Minerals

No impact to mineral resources would occur as a result of the Proposed Action(s).

5.6.1.4 Seismicity

Regardless of the facilities constructed, seismic risks associated with faults in the vicinity of Fort Harrison would continue at existing levels as detailed in Section 4.6.3 on Page 4-22 of this EA. All buildings or projects associated with this EA will be designed for compliance with the requirements of Seismic Zone 3, as defined by the Uniform Building Code.

5.6.2 Potential Impacts of the Alternative Action

Impacts resulting from the Alternative Action(s) for construction(short term) and operation(long term) would be the same as described in Section 5.6.1.

5.6.3 Potential Impacts Of The No Action Alternative

There would be no impact to the physiography/geology, minerals or seismicity under the No Action Alternative. There would be a negative impact resulting from the non-implementation of projects 4A and 4B, which are designed to help control and limit ongoing erosion through the Base. Current management of the Base (limiting vehicle traffic to existing roads and rotating the use of training areas) will continue.

5.7 WATER RESOURCES

Water is a finite but renewable resource whose quality can be degraded by contaminants, and whose quantity can be altered by physical disturbances which alter the hydrology of the area.

An impact to water resources would be considered potentially significant if an aquifer, groundwater well, or surface water body is adversely affected, resulting in a measurable change in a user's water supply, or if a water quality criteria, such as a MCL, is exceeded. A decrease in groundwater recharge and increase in runoff could also be significant if the stormwater system could not adequately handle the increased volume of water, and the increased potential for flooding. No impact would result if no measurable change would occur. A beneficial impact would result from an improvement to water quality or quantity by decreasing contaminant levels, increasing groundwater recharge, or decreasing the potential for future contamination.

Under the Proposed Action(s) and Alternative Action(s), water resources (groundwater, surface water, and water quality) would not be negatively impacted. There would be some beneficial impact as a result of the projects.

5.7.1 Potential Impacts Of The Proposed Action

5.7.1.1 Groundwater

Construction related activities would not significantly impact groundwater as all excavations and related sitework are considered 'shallow' activities and the disturbance will remain above the groundwater table in the Base area. Potential impacts to ground water from operations activities would result from contamination from maintenance or fueling operations. Any spills of hazardous materials would be addressed by the Spill Prevention and Response Plan currently in place on Base. Projects 1F and 4A would provide beneficial long-term affects as they deal with collecting and improving existing surface water drainage, which could potential impact the groundwater.

5.7.1.2 Surface Water

The Proposed Action(s) could alter the surface water hydrology during construction activities and materially impact surface water quality from discharges of sediment. Because of the size of the impacted area for certain projects, a General Discharge Permit for Storm Water will have to be obtained and coordinated with the State Department of Environmental Quality. These permits will be required prior to construction taking place.

Storm water runoff after construction will be enhanced by the projects in this EA and the Base intends to continue to upgrade the existing storm drainage system in the

affected areas as work of each specific project. Project 1F will provide a beneficial impact to the overall Base water quality as it will centralize and capture water used in washing military vehicles. Project 4A will also provide a beneficial impact to water quality as it will collect and channelize the existing storm water drainage as it works it's way through the Base.

Only slight, but beneficial, changes in the surface water runoff may occur as the result of adding new paved parking areas and roadways. Improving (grading, emplacing culverts, and adding gravel) roads in conjunction with the proposed projects may also slightly alter surface runoff, but since there is infrequent precipitation and runoff, and no permanent surface waters are located on the properties proposed for acquisition, no impact to surface waters would be anticipated.

5.7.1.3 Water Quality

Water quality would not be changed noticeably under the current projects in the Proposed Action(s).

5.7.2 Potential Impacts Of The Alternative Action

With the exception of project 4A, the impacts for construction and operation would be the same as described in Section 5.7.1. Because project 4A does not provide an Alternative Action and this project deals specifically with enhancing current storm water runoff through the Base, there would be a negative significant impact if the Proposed Action were not implemented.

5.7.3 Potential Impacts Of The No Action Alternative

Because the Base intends to use each of the separate projects to enhance the overall Base storm water management issue, the No Action Alternative(s) would actually create a negative impact. Specifically, the No Action Alternatives for projects 1F and 4A would create a negative significant impact.

5.8 BIOLOGICAL RESOURCES

Impacts to biological resources from existing activities on Fort Harrison result primarily from foot and vehicular traffic, bivouacs, and occasional helicopter flyovers. However, these activities do not lead to degradation of critical habitat or risk the viability of threatened or endangered flora or fauna. Impacts to biological resources on Fort Harrison from existing activities are insignificant. Implementation of the Proposed Action(s) or Alternative Action(s) would not result in any significant impacts to vegetation, wildlife, and wetlands. No impacts would occur to sensitive, threatened, or endangered species.

Biological resources are plants and wildlife, including sensitive, Federally- or state-listed endangered or threatened species, and wetland areas. Impacts to biological resources could be significant if the viability of protected plant or animal species was jeopardized, with little likelihood of re-establishment after completion of the action. A lesser impact could result if the disturbed population could be reestablished to its original state and condition, or the population was sufficiently large or resilient to respond to the action without a measurable change. The significance of an impact is also dependent upon the importance of the resource, and the proportion of the resource that could be affected relative to its occurrence in the vicinity. An increase in population numbers in response to an enhanced habitat, or the increased viability of a species, could be considered a beneficial impact. Significant impacts on wetlands could occur if activities associated with the Proposed Action(s) or Alternative Action(s) resulted in altered hydrologic flow, drainage of sediment or contaminants into surface waters or wetlands areas, or actual filling or destruction of a wetland area.

5.8.1 Potential Impacts Of The Proposed Action

5.8.1.1 Vegetation

The projects proposed as part of this EA will have minimal impact on existing vegetation. All sites have previously been disturbed either through previous construction or agricultural activities. Upon completion of construction at each project site, all vehicle and foot traffic will be restricted to existing roads and walkways.

5.8.1.2 Noxious Weeds

Insignificant impacts are anticipated as a result of the Proposed Action(s). Spraying of noxious weeds will continue using current policies and procedures.

5.8.1.3 Wildlife

The proposed Action would not result in any impacts to wildlife. Projects involved in this EA are primarily in the existing developed Fort area, not in areas normally used by current elk and deer populations. Impacts to wildlife from helicopter flyovers on the parcel would be the same as impacts from exiting activities.

5.8.1.4 Sensitive, Threatened, Or Endangered Species

The Proposed Action(s) would not result in any impacts to sensitive, threatened, or endangered species. A biological survey was conducted as part of an earlier EA, but included the entire Fort Harrison area. Albert Harting, a Consulting Wildlife Biologist conducted the survey for the MT ARNG. Agencies consulted included the Montana Natural Heritage Program, the U.S Fish and Wildlife Service and the Montana Department of Fish, Wildlife and Parks. That survey did not identify any

sensitive, threatened, or endangered species in the Fort Harrison area. Also, during the IICEP process at the beginning of the EA process, the U.S. Fish and Wildlife and Montana Department of Fish, Wildlife and Parks were contacted.

Correspondence between Mr. Harting and Major Steve Martinka in included in Appendix D.

5.8.1.5 Wetlands

The Proposed Action(s) would not result in any impacts to wetlands. No activities currently take place within or adjacent to two mesic (wet) areas, one of which was recently identified as meeting the criteria for a wetland (MT ARNG, 1996b). No development or change in activities is proposed in either area as part of this action.

5.8.2 Potential Impacts Of The Alternative Action

Potential impacts to biological resources from the Alternative Action(s) would be similar to those of the Proposed Action(s), therefore, the impacts would be the same as described in Section 5.8.1.

5.8.3 Potential Impacts Of The No Action Alternative

The No Action Alternative would not have any effect on the Biological Resources in the Fort Harrison area.

5.9 CULTURAL RESOURCES

Cultural resources are limited, nonrenewable resources whose values may be easily diminished by physical disturbances. Existing activities such as foot and vehicular traffic, bivouacs, and helicopter flyovers do not impact cultural resources on Fort Harrison. There has not been any degradation of unique archeological resources or the destruction of structures listed or eligible for listing on the NRHP from existing activities at Fort Harrison. Implementation of the Proposed Action(s) or No Action Alternative would not result in any significant impacts to cultural resources; therefore, impacts would be similar to those from existing activities.

The criteria used to determine the significance of impacts on cultural resources includes the effects on NRHP eligibility, future research potential, or suitability for religious or traditional uses. An impact could be significant if it resulted in the physical alteration, destruction, or loss of a resource listed or eligible for listing in the NRHP. An adverse impact would not be significant if only slight portions of the resource were affected or if the value of the resource was not very important. The impact of the action could be beneficial if it protected or reconstructed the resource.

5.9.1 Potential Impacts Of The Proposed Action

The Proposed Action(s) will impact existing cultural resources, primarily existing buildings. However, the impact is considered insignificant given proper mitigation measures required by the State Historic Preservation Office(SHPO).

Section 2.2.1 discusses the impact of the projects involved in this EA on the existing buildings, specifically related to removal of certain building from the Base. Coordination required with SHPO prior to the removal of any facility is detailed in that Section and will not be repeated here.

The demolition of any existing building(s) required to be removed due to new construction as a result of the Proposed Action(s) associated with this EA will be coordinated with SHPO on a case by case basis and they will be removed only after proper mitigation measures have been implemented. (Warhank/SHPO 1998)

In an earlier EA, the site around the existing firing range was the subject of a Phase I Archaeological Survey which did not identify any sites considered eligible for the National Register of Historic Places.

5.9.2 Potential Impacts Of the Alternative Action

The impacts from construction would be less under the Alternative Action(s) as the common warehouse facility for the projects in Action Group 1 would be located in an area where no existing buildings exist and thus demolition of existing buildings would not be required. However, on the operations side, the positive impact of not removing the existing buildings is offset by the deteriorated conditions of the existing building and the continual maintenance that will be required if the existing buildings remain. The Base will in all likelihood continue to remove vacant, unsafe and unusable buildings from the site regardless of the outcome of the projects involved in this EA.

The impact of the remaining projects would be the same as described in Section 5.9.1.

5.9.3 Potential Impacts Of The No Action Alternative

The No Action Alternative would not have any impact on the existing Cultural Resources.

5.10 SOCIOECONOMIC ENVIRONMENT

Socioeconomic resources include elements such as employment, income, and population, which are considered within a specific ROI. Socioeconomic impacts of current activities at Fort Harrison are insignificant but beneficial. As a result of the

Proposed Action(s), impacts to socioeconomic resources in the ROI (Lewis and Clark County) are predicted to be insignificant but beneficial.

Significance criteria for socioeconomic resources are determined by analyzing long-term fluctuation in elements such as employment and population within an ROI. This analysis allows a determination of the appropriate levels, or thresholds, beyond which changes in population or employment would noticeably affect individuals and communities within the ROI. Based on this methodology, a significant impact for the ROI, Lewis and Clark County, would be a change of more than 2.0 percent in projected employment or population. Generally, increases in employment and income are considered beneficial, unless those increases are accompanied by large, rapid population increases that overwhelm the capacity of the local housing market, schools, and government services.

5.10.1 Potential Impacts Of The Proposed Action

5.10.1.1 Employment And Income

Only one facility anticipated in the Proposed Action(s) will result in any additional personnel in the Helena area. That project, the Naval Reserve Center, will employ 5-10 full time positions resulting from the closing of Naval Reserve Centers in Billings, Great Falls and Missoula, Montana due to this consolidation.

The remainder of the personnel involved with the new facilities are currently either on site or located in Helena. The projects involved with this EA will have a slight positive, but insignificant, impact of the employment and income in the study area.

5.10.1.2 Population

It is anticipated that less than 10 personnel are expected to relocate to the Helena area as a result of the Proposed Action(s). Therefore, an insignificant impact to the population is projected.

5.10.1.3 Environmental Justice

Pursuant to Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, the proposed project(s) has been evaluated to determine whether it would result in any disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

The Proposed Action(s) included in this EA would not take place in any non-military communities, including those of minority or low-income groups. There would be no burdens placed on any community resources nor would any adverse health conditions be created by the proposed actions. As a result, there are no adverse impacts on minority or low-income populations.

5.10.1.4 Local Government Revenue

There would be no significant revenue implications of this action as a result of the projects included in this EA.

5.10.2 Potential Impacts Of The Alternative Action

The Alternative Action for project 2D involves continuation of those services at locations other than Helena. However, because of the full-time employment for that facility is extremely limited there would be no significant impact.

Impacts from the Alternative Action(s) for the remainder of the projects are as described in Section 5.10.1.

5.10.3 Potential Impacts Of The No Action Alternative

The No Action Alternative would create no significant impact on the Socioeconomic Environment.

5.11 INFRASTRUCTURE

During the Scoping Process, comments received back from the Veterans Administration indicated a concern over the water and sewer systems jointly serving the facilities, along with fire protection. As a result, the Guard has employed two separate firms to provide an update to the 1987 Utility Systems Master Plan, specifically in the areas of water and sewer capacity.

The fire protection issue is also a concern related not only to the existing facilities, but also any new facilities or improvements anticipated at this site.

A third related issue deals with water rights and maintenance of landscaping. If the Guard proposed to use well water for that purpose, a neighbor (Mr. Shatz) has preemptive water rights and is concerned about the volume of water that may be used. If City water will be used for maintenance of landscaping, that will not be a concern.

5.11.1 Potential Impacts Of The Proposed Action

5.11.1.1 Potable Water

The information contained in the 1987 Utilities Master Plan indicated that the water service provided by the City of Helena was sufficient to supply the base as it currently existed with proposed expansion. The main deficiency pointed out in that study dealt with the distribution system. At that time, the replacement of the distribution system was estimated between $450,000 and $500,000. In today's dollars, those improvements could be approaching $650,000.

A separate study has been commissioned to review the status of the water service to Fort Harrison. This narrative will not attempt to preview the results of that study but will defer the discussion on the ability of the current service and distribution system to adequately serve the projects included in this EA.

A general assumption would be that the existing water capacity provided by the City of Helena is sufficient to serve the existing and projected needs, but that the distribution system may need to be upgraded as facilities are added to the system.

5.11.1.2 Wastewater Treatment

The discussion of the capacity of the wastewater system at Fort Harrison will mirror the above discussion concerning the water system. The 1987 Utility System Master Plan indicated that the capacity of the current system was sufficient to accommodate up to 1,000 personnel at the base. The planned improvements in this EA will not take the base beyond that number so it could be assumed that the sanitary sewer system is sufficient.

However, the condition of the sewage lagoons is questionable and there have been reports of leakage. Like the water system, the Guard has involved a separate consultant to evaluate the wastewater distribution and treatment capacities currently in place to determine their ability to serve both the Guard and the VA Hospital.

Depending upon the timing of the release of that study, the results may or may not be included as part of this EA.

5.11.1.3 Storm Water System

It is anticipated that construction of the buildings, roadways and parking areas involved with the projects in this EA will increase the amount of surface runoff at the Fort Harrison complex. Because Lewis and Clark County recommends retention of quantities above historical runoff, detention areas will be identified for each project as appropriate as directed by the County.

Additionally, as improvements are made, culvert sizes will be sized per the guidance provided in the 1987 Utility System Master Plan. Any culverts replaced due to new sitework will also be sized accordingly.

It is not anticipated that underground storm water system will be installed at this facility so all required drainage will be routed to the two existing main drainage channels that currently traverse the base. Improvements to the northern most drainage are proposed as part of the work of Action Item 4A.

5.11.1.4 Solid Waste Disposal

Solid waste will continue to be handled by private contractor. Except for during construction, the amount of waste is not anticipated to increase greatly over current amounts and no significant impact is anticipated.

5.11.1.5 Natural Gas

Natural gas consumption will increase due to the projects included in this EA as it is the preferable fuel choice for the heating systems. Montana Power Company will continue to provide service to the base from via it's existing operation in Helena. The additional load will create no significant impact for this service(MPC 1997).

5.11.1.6 Electrical Service

Electricity consumption will increase due to the projects included in this EA, primarily for power and lighting purposes. Montana Power Company will continue to provide service to the base via it's existing operation in Helena. The additional load created will have no significant impact on this service(MPC 1997).

5.11.1.7 Roadways And Traffic

A separate Traffic Study(Appendix E), specifically tailored to the projects in this EA was completed as a component of this EA. The results of that study indicate there will be no significant impact on the adjacent roadways in the study area.

5.11.1.8 Rail Access

The projects in this EA will have no impact on the current rail access to the Fort.

5.11.1.9 Air Operations

The projects in this EA will add only one additional helicopter flight to the area of the Fort each week. Based on current operations of 8 - 10 flights per day, that impact of one additional flight will be insignificant.

5.11.2 Potential Impacts Of the Alternative Action

Impacts due to the Alternative Action(s) are as described in Section 5.11.1.

5.11.3 Potential Impacts Of The No Action Alternative

There would be no significant impact on Infrastructure elements given the No Action Alternative.

5.12 HAZARDOUS AND TOXIC MATERIALS/WASTES

Based on current and proposed operational guidelines, the ongoing MT ARNG operations have minimal impacts on environmental programs identified in Section 4. Based on MT ARNG pollution prevention efforts, there may be lesser amounts of hazardous materials used or wastes (solid, hazardous, and water) generated as the training activities are continued . Identified IRP sites would not be affected by the Proposed Action(s) or Alternative Action(s).

The Proposed Action(s) and Alternative Action(s) would have a negligible impact on hazardous materials and waste management.

An impact would be significant if quantities of wastes generated were to exceed regulatory limits or existing disposal capabilities. There would also be a significant impact if workers or the general public were exposed to hazardous materials or wastes above health criteria levels. A beneficial impact would occur if hazardous material or various waste quantities are reduced or eliminated.

The assessment of potential impacts to environmental programs focused on MT ARNG operations, the use of hazardous materials, and the generation of wastes. Materials that could be used and the wastes that could be generated by the Proposed Action(s) or Alternative Action(s) were identified, and considered for their potential to affect personnel handling or managing the materials or wastes. The location of IRP sites and potential IRP sites, and the potential for disturbing those sites, was also considered.

The analysis was performed using information obtained from interviews with MT ARNG personnel, and a review of relevant regulations, program documents, and associated data. Reference documents described material usage, waste generation, and plans or programs to manage and reduce the generation or handling of hazardous materials and various wastes.

5.12.1 Potential Impacts Of The Proposed Action

Short-term potential impacts will be created by the vehicles and equipment utilized during the construction of the project(s) and the potential for contamination resulting from the increase in traffic on site during that period. Because of the size of the projects involved with this EA, it is not anticipated that any temporary fuel tanks, on-site fueling or maintenance of construction vehicles would be involved, thus the exposure to POL spills or contamination will be limited.

Contractors will be required to maintain safety and environmental programs throughout the construction period(s) as a form of mitigation. MT ARNG Environmental Office personnel will monitor these programs on a routine basis to ensure compliance and implementation of corrective measures as needed. With proper supervision and mitigation, the potential for any short-term construction related hazardous material discharge is considered to be insignificant.

On a long-term basis, the Proposed Action(s) would not create a significant impact on the current MT ARNG management and disposal of wastes or the potential for contamination due to a POL discharge. The types and amounts of materials currently used are not likely to change significantly, and the current emphasis on the reduction of hazardous material use will continue.

There may be some additional fuels resulting from a slight increase in personnel on Base, but the amounts would be relatively small. No on-site fuel tanks will be required as a result of the Proposed Action(s) and the new vehicles that are being introduced to the base will not be fueled on site. No major maintenance areas are associated with the action, and very limited additional waste generation or changes in waste handling would occur.

Project 1F would provide a beneficial impact as the excess water from washing operations would pass through an oil/water separator prior to being released. Currently that water, including POL residue, is discharged directly onto the ground and into the storm drainage system.

5.12.2 Potential Impacts Of The Alternative Action

Impacts as a result of construction and operations would remain the same as described in Section 5.12.1.

5.12.3 Potential Impacts Of The No Action Alternative

Under the No Action Alternative, the MT ARNG management and disposal of materials or wastes would be unchanged from existing methods. No additional material uses or waste generation or changes in waste handling would occur. No significant impact would occur under this scenario.

5.13 CUMULATIVE IMPACTS

The previous sections describe the potential impacts that could occur at Fort Harrison as a result of the proposed construction of the Proposed Action(s). NEPA also requires that EAs evaluate whether the Proposed Action(s) could result in cumulative environmental impacts. Cumulative impacts were identified by comparing the potential impacts of the Proposed Action(s) and other past, current, or proposed actions in the area to establish whether, in the aggregate, they could result in environmental impacts.

The following subsections discuss unavoidable and cumulative impacts as a result of implementing the Proposed Action(s), Alternative Action(s) or No Action Alternative(s). The results of this analysis indicate that no cumulatively significant impacts are projected to occur. The Fort Harrison complex has the additional capacity to expand it's mission without significantly affecting the environment.

5.13.1 Location

Flying, range firing, and field training exercises will continue at approximately the same levels, regardless of whether the Proposed Action(s) is implemented. Ongoing impacts (i.e., rare accidents), from these missions are unavoidable. No new missions or activities are planned to be introduced at Fort Harrison and it's adjacent training area. With no mission changes associated with the action, there would be no significant, cumulative impacts to operations and safety.

5.13.2 Land Use

No cumulatively significant impact to land use would occur, other than the positive impact of projects in Action Group 3, as a result of the development of the proposed projects in this EA.

5.13.3 Aesthetics And Visual Resources

A positive cumulative impact would be created by these projects, primarily by the replacement of outdated, deteriorated structures with new, modern buildings designed to fit within the visual framework of the remaining existing buildings.

5.13.4 Air Quality

There would be unavoidable air emissions from the operation of helicopters and other equipment, including personal vehicles, but these emissions would be minimal. The emissions would be cumulative with other ongoing activities in the area, but would not affect the attainment status of the Fort Harrison area or the current non-attainment area located near the airport.

5.13.5 Noise

No noise impacts to the environment would occur from implementing the Proposed Action(s). Noise generated by helicopter flights, firing of weapons, and vehicle traffic would occur at the same rate and frequency as currently exist under the baseline condition. Consequently, no cumulatively significant impacts would occur as a result of the Proposed Action(s).

5.13.6 Geologic Resources

Insignificant, unavoidable impacts to soils would occur from construction projects at For Harrison over the next ten years. Because these projects would occur over different timeframes and in different areas, no cumulative impacts are anticipated.

No cumulatively significant impacts would occur regarding the geology, physiography, and seismicity of the area around and including Fort Harrison.

5.13.7 Water Resources

No unavoidable or significant cumulative impacts are predicted for the Proposed Action(s). Taken as a whole, the projects in this EA will provide a beneficial impact to the groundwater and surface water characteristics at Fort Harrison.

5.13.8 Biological Resources

No unavoidable or significant cumulative impacts would occur under the Proposed Action(s).

5.13.9 Cultural Resources

There is little likelihood of affecting previously unknown or undisturbed resources. Thus, no unavoidable impact has been identified. No cumulative effects of activities for the Proposed Action(s), when considered with other ongoing and planned actions, would significantly impact cultural resources at Fort Harrison. An archaeological survey was performed that documented sites and artifacts not eligible for the NRHP. Even if these areas were disturbed, the documentation provides sufficient information so no significant impact would occur per incident, or cumulatively.

5.13.10 Socioeconomic Resources

No unavoidable impacts are predicted to occur. Construction is planned to occur at Fort Harrison for future projects, as evaluated in the Fort Harrison Master Plan (MT ARNG, 1996). Based on the level of activity projected to occur, no cumulatively significant socioeconomic impacts are likely. The proportion of Fort Harrison's contribution to the local economy based on the projects in this EA is not significant.

5.13.11 Infrastructure

The cumulative impact of the projects in this EA will impact the infrastructure, primarily the water and sanitary sewer systems. The MT ARNG has recognized this impact and is currently in the process of mitigating that impact by evaluating the capacities of those systems in conjunction with the Veterans Administration and their adjacent medical/hospital complex.

A Traffic analysis(see Appendix E) was completed that shows no cumulative impact to the roadways and traffic patterns around the facility as a result of these projects.

The remainder of the infrastructure concerns will not be significantly impacted by the projects in this EA.

5.13.12 Hazardous And Toxic Wastes/Materials

Implementing the Proposed Action(s) would not change the type and amount of activities that occur within the Fort Harrison training area. Although unavoidable impacts of waste generation (solid, hazardous, and wastewater) and hazardous material usage would continue to occur under these existing activities, no new unavoidable impacts would result from implementing the Proposed Action(s). No cumulatively significant impacts to environmental programs are projected to occur under the Proposed Action(s).

5.14 COMPATIBILTIY OF THE PROPOSED ACTION WITH OBJECTIVES OF FEDERAL, STATE, AND LOCAL LAND USE PLANS, POLICIES, AND CONTROLS

The Proposed Action(s) would be compatible with existing Federal, state, and local land use plans, policies, and controls. The action would also be consistent with current Fort Harrison activities.

SECTION 6

6.0 CONCLUSION

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act of 1969, as amended, and Army Regulation 200-2, an assessment of the identified and cumulative environmental effects has been prepared for the actions described in this Environmental Assessment. The determination has been made that the action will have no significant impact to the quality of the human or natural environment. Therefore, an Environmental Impact Statement is not warranted.

6.1 COMPARISON OF ALTERNATIVES

This EA provides a comparison of the Proposed Action, an Alternative Action and a No Action Alternative for each project with the exception of Projects 3A, 3B, 3C, 4A and 4C. Alternative Actions for those projects were screened out early in the EA process as described in Section 3.

A detailed comparison of the Proposed Action(s), the Alternative Action(s) and the No Action Alternative(s) is included in Section 5.

6.2 MITIGATION MEASURES

Taken from AR 200-2, Appendix F, the 1978 CEQ regulations for implementing NEPA recognizes the following 5 means of mitigating an environmental impact:

- Avoidance/No Action
- Limitation of Action/Minimization
- Restoration of Environment/Remediation
- Preservation and Maintenance Operations/Reduction
- Replacement/Compensation

The first method, avoidance, is essentially the ‘No Action Alternative’. Through the dialogue presented in this EA, it has been shown that this option is not feasible if the Guard units assigned to this facility are to maintain their capability to fulfill their mission. Likewise, the last method, replacement, is not applicable in this case.

Required mitigation measures resulting from the projects contained in this EA will use the middle three methods, Minimization, Remediation and Reduction, to reduce the impact on the environment.

In general terms, very few impacts were discovered that will require any type of mitigation. Impacts were reviewed on the basis of short-term or construction related and long-term or operations related conditions. The majority of identified impacts and thus the resulting mitigation efforts are of the short-term nature, projected to occur during construction. With proper mitigation during construction, long-term impacts are projected to be negligible.

Proposed measures to mitigate adverse impacts that were identified as part of this EA are noted below, as applicable. Listing the mitigations assists the project proponents in maintaining compliance with environmental regulations.

- **Aesthetics and Visual Resources** - the facilities being proposed in this EA will be designed to blend into and complement the existing facilities at Fort Harrison. This type of integrated mitigation will enhance the overall visual impact of the base and it's surroundings.

- **Air Quality** - during construction, areas of the site will be disturbed that will create dust and equipment being used will create minimal amounts of air pollution. Good construction practices will be used to mitigate any significant impacts.

- **Geology and Soils** - during construction, areas of the site will be disturbed that have the potential to create erosion and related short term impacts if not properly mitigated. Good construction practices will be used to mitigate any significant impacts.

- **Storm water runoff** - during construction and beyond, areas of the site will be modified, exposed or paved. Those changes will create additional storm water runoff beyond current conditions. Each project will be analyzed and on-site storm detention basins created in compliance with Lewis and Clark County recommendations. The State of Montana will also require discharge permits for storm water runoff associated with certain construction projects. Additionally, as facilities are constructed, underground culverts and other storm drainage components will be sized in accordance with the 1987 Utility Systems Masterplan.

- **Cultural Resources** - several existing buildings, of undetermined historical significance, will be demolished as work proceeds on the projects included in this EA. A plan has been developed with the State Historic Preservation Office(SHPO) that will provide adequate mitigation due to the loss of any buildings deemed eligible for listing on the National Register of Historic Places. Coordination will take place with SHPO as the projects are developed to make sure all necessary mitigation efforts are implemented prior to the demolition of any significant historic structure.

- **Site Water and Sanitary Sewer** - the projects included in this EA will have an impact on water and sewer systems. The MT ARNG has already recognized this and in an effort to mitigate the impacts has commissioned separate studies for both utilities. Projects to upgrade the systems will be initiated based on the results of those studies.

6.0 CONCLUSION

In accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act of 1969, as amended, and Army Regulation 200-2, an assessment of the identified and cumulative environmental effects has been prepared for the actions described in this Environmental Assessment. The determination has been made that the action will have no significant impact to the quality of the human or natural environment. Therefore, an Environmental Impact Statement is not warranted.

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This EA provides a comparison of the Proposed Action, an Alternative Action and a No Action Alternative for each project with the exception of Projects 3A, 3B, 3C, 4A and 4C. Alternative Actions for those projects were screened out early in the EA process as described in Section 3.

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The first method, avoidance, is essentially the ‘No Action Alternative’. Through the dialogue presented in this EA, it has been shown that this option is not feasible if the Guard units assigned to this facility are to maintain their capability to fulfill their mission. Likewise, the last method, replacement, is not applicable in this case.

Required mitigation measures resulting from the projects contained in this EA will use the middle three methods, Minimization, Remediation and Reduction, to reduce the impact on the environment.

In general terms, very few impacts were discovered that will require any type of mitigation. Impacts were reviewed on the basis of short-term or construction related and long-term or operations related conditions. The majority of identified impacts and thus the resulting mitigation efforts are of the short-term nature, projected to occur during construction. With proper mitigation during construction, long-term impacts are projected to be negligible.

Proposed measures to mitigate adverse impacts that were identified as part of this EA are noted below, as applicable. Listing the mitigations assists the project proponents in maintaining compliance with environmental regulations.

- **Aesthetics and Visual Resources** - the facilities being proposed in this EA will be designed to blend into and complement the existing facilities at Fort Harrison. This type of integrated mitigation will enhance the overall visual impact of the base and it's surroundings.

- **Air Quality** - during construction, areas of the site will be disturbed that will create dust and equipment being used will create minimal amounts of air pollution. Good construction practices will be used to mitigate any significant impacts.

- **Geology and Soils** - during construction, areas of the site will be disturbed that have the potential to create erosion and related short term impacts if not properly mitigated. Good construction practices will be used to mitigate any significant impacts.

- **Storm water runoff** - during construction and beyond, areas of the site will be modified, exposed or paved. Those changes will create additional storm water runoff beyond current conditions. Each project will be analyzed and on-site storm detention basins created in compliance with Lewis and Clark County recommendations. The State of Montana will also require discharge permits for storm water runoff associated with certain construction projects. Additionally, as facilities are constructed, underground culverts and other storm drainage components will be sized in accordance with the 1987 Utility Systems Masterplan.

- **Cultural Resources** - several existing buildings, of undetermined historical significance, will be demolished as work proceeds on the projects included in this EA. A plan has been developed with the State Historic Preservation Office(SHPO) that will provide adequate mitigation due to the loss of any buildings deemed eligible for listing on the National Register of Historic Places. Coordination will take place with SHPO as the projects are developed to make sure all necessary mitigation efforts are implemented prior to the demolition of any significant historic structure.

- **Site Water and Sanitary Sewer** - the projects included in this EA will have an impact on water and sewer systems. The MT ARNG has already recognized this and in an effort to mitigate the impacts has commissioned separate studies for both utilities. Projects to upgrade the systems will be initiated based on the results of those studies.

SECTION 7

SECTION 7.0: REFERENCES

Damschen & Associates	Traffic/Pavement Evaluation (Appendix E) Helena, MT August 1997
Helena, City of	Helena Chamber of Commerce Internet Communication July 1997
Montana Army National Guard	Major Steve Martinka/Captain Kurt Reynolds Various Personal Communications MT ARNG Environmental Office 1100 North Main Helena, MT 59601
Montana Army National Guard	Final Environmental Assessment Helicopter Conversion Helena Regional Airport February 1995
Montana Army National Guard	Final Environmental Assessment Fort Harrison Land Exchange Fort Harrison, MT July 1995
Montana Army National Guard	Final Environmental Assessment Fort William Henry Harrison Land Acquisition Fort Harrison, MT January 1997
Montana Army National Guard	Draft Environmental Assessment Relocation of a Black-tailed Prairie Dog Colony Fort William Henry Harrison June 1997
Montana Army National Guard	Soldier's Handbook for Environmental Protection Undated
Montana Army National Guard	Cultural Resources Management Plan Fort Harrison, MT Revised, April 1997
Montana Army National Guard	Installation Restoration Program Final Site Inspection Field Work Plan Fort William Henry Harrison Helena, Montana February 1995

SECTION 7.0: REFERENCES

Montana Army National Guard	Utility System Master Plan for Fort William H. Harrison Helena, Montana December 1987
U.S. Air Force	Revised Guidance for Environmental Documentation Departments of the Army and the Air Force National Guard Bureau Washington, DC March 1996
U.S. Army	Revised Guidance for Environmental Documentation Departments of the Army and the Air Force National Guard Bureau Washington, DC March 1996
U.S. Army	Army Regulation 200-1 Environmental Protection and Enhancement Department of the Army Washington, DC February 1997
U.S. Army	Army Regulation 200-2 Environmental Effects of Army Actions Department of the Army Washington, DC December 1988
U.S. Government	The National Environmental Policy Act of 1969, as amended Council on Environmental Quality Executive Office of the President Washington, DC
Warhank, Josef	Montana State Historical Preservation Office Various Personal Communications PO Box 201202 Helena, MT 59620 February 1998

SECTION 8

SECTION 8.0: GLOSSARY

Because of the non-technical nature of this Environmental Assessment, very few technical terms have been used that require additional explanation. An effort has been made to define semi-technical terms used at the point of use.

Definitions are provided for the following military terms that may not be not be familiar to non-military reviewers are provided.

Billet	A lodging for troops.
Bivouac	A temporary encampment made by soldiers in the field.
Cantonment	The assignment of troops to temporary quarters or, the quarters assigned.

SECTION 9

SECTION 9.0: ACRONYMS AND ABBREVIATIONS

AASF	Army Aviation Support Facility
ARNG	Army National Guard
BOQ	Bachelor Officer Quarters
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CSMS	Combined Support Maintenance Shop
CTA	Collective Training Area
dB	decibel
dBA	"A-weighted" decibel
dBP	linear peak sound level
DMAMT	Department of Military Affairs—Montana
DoD	Department of Defense
DOPAA	Description of Proposed Action and Alternatives
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
HAP	hazardous air pollutants
HUD	Housing and Urban Development
HVFAS	Helena Valley-Fill Aquifer System
ICUZ	Installation Compatible Use Zone
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IRP	Installation Restoration Program
L_{dn}	average sound level
MAAQS	Montana Ambient Air Quality Standards
MCL	maximum contaminant level
mg/L	milligrams per liter
MILES	
MOSQ	Military Operational Specialty Qualification
MPH	miles per hour
MT ARNG	Montana Army National Guard
MTDMA	Montana Department of Military Affairs
MTRTI	Montana Regional Training Institute

SECTION 9.0: ACRONYMS AND ABBREVIATIONS

NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_X	nitrogen oxide
NRHP	National Register of Historic Places
O_3	ozone
ODS	ozone depleting substance
OMS	Organizational Maintenance Shop
Pb	lead
PCI	per capita income
PM_{10}	particulate matter
ppm	parts per million
PSD	prevention of significant deterioration
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
SARA	Superfund Amendments and Reauthorization Act
SEAL	sea, air, and land
SEL	sound exposure level
SOP	Standard Operating Procedure
SO_2	sulfur dioxide
TASC	
tpy	tons per year
ug/L	micrograms per liter
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USPFO	United States Property Fiscal Office
UTES	
UXO	unexploded ordnance
VA	Veterans Administration
VAMROC	Veterans Administration Medical and Regional Office Center
VOC	volatile organic compound

APPENDIX A

APPENDIX A: IICEP SCOPING PROCESS

This Appendix contains a copy of the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) letter and a list of agencies who received the letter. It also contains a copy of the comment letters received on the 'Draft' versions of Section 1: Purpose of and Need for the Proposed Action and Section 2: Description of the Proposed Action.

Copies of the response letters sent to the agencies who responded to the IICEP letter are also included, directly following the respective comments.

Additional correspondence has also been receive from the State Historical Preservation Office based on continuing work with that office on preparation of the EA. A copy of that correspondence is also included, along with the earlier correspondence received from SHPO is included following.

Attached are:

-Sample IICEP letter that was mailed out at the beginning of the EA process.

-IICEP Addressee list.

-Initial response from SHPO received 7/22/97

-CTA follow-up letter to SHPO dated 9/4/97

-CTA follow-up letter to SHPO dated 1/22/98

-Follow-up from SHPO received 2/9/98

-IICEP comments received from MT USPFO

-CTA follow-up letter to MT USPFO dated 9/4/97

-IICEP comments received from VAM&ROC

-CTA follow-up letter to VAM&ROC dated 9/4/97

-IICEP comments received from Montana DEQ dated 6/30/97

-CTA follow-up letter to DEQ dated 9/4/98

-MT ARNG letter from Captain Kurt Reynolds providing documentation for follow-up on National Guard Comments.

No other correspondence has been received by contacted agencies regarding the preparation of this EA.

June 20, 1997

Dept. of Agriculture
Environmental Management Division
Agriculture and Livestock Building
Capitol Station
PO Box 200201
Helena, Montana 59620-0201

Dear Sir/Madam:

The Montana Army National Guard (MT ARNG) is currently in the preliminary planning phase of several construction projects that will be implemented over the next 10 year period within the existing boundaries of Fort William Henry Harrison, Helena, Montana. According to the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA), the MT ARNG must assess the environmental impact of the proposed action and alternatives. The MT ARNG has contracted CTA Architects Engineers to prepare an environmental assessment to analyze the cumulative potential impact that will result from the above noted work.

In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, the MT ARNG is requesting input from other federal, state and local agencies on the above work. Draft copies of the Purpose and Need & Description of the Proposed Action documents are attached for your review and comment. Please identify any resources within your purview that may be potentially impacted. A site plan with project information is included to assist your office in reviewing the proposal.

Please provide any comments or information within 30 days of receipt of this letter. Responses may be sent to:

CTA Architects Engineers
Attn: Jim Wertman
PO Box 1439
Billings, MT 59103

Your assistance in providing this information is greatly appreciated. Questions may be directed to Major Steve Martinka of the MT ARNG at 406.444.7943, or to Jim Wertman of CTA Architects Engineers at 406.248.7455.

Sincerely,

CTA ARCHITECTS ENGINEERS

Jim Wertman, AIA

Attachment

cc: CTA File - MNGT-EA

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APPENDIX A
IICEP ADDRESSEE LIST

Dept. of Agriculture
Environmental Management Division
Agriculture and Livestock Building
Capitol Station
PO Box 200201
Helena, Montana 59620-0201

Dept. of Natural Resources & Conservation
Mr. Art Compton
1520 East 6th Avenue
Helena, Montana 59620-2301

Montana Dept. of Fish, Wildlife & Parks
1420 East 6th Avenue
Helena, Montana 59620

Dept. of Environmental Quality
Ms. Jan Sensibaugh
Permitting & Compliance Division
Metcalf Building
Helena, Montana 59620

Dept. of Environmental Quality
Frederick C. Shewman, PhD
Water Protection Bureau
PO Box 200901
Helena, Montana 59620-0901

State Historic Preservation Officer
Mr. Stan Wilmoth
PO Box 201202
Helena, Montana 59620-1202

Environmental Protection Agency
Region 8
999 - 18th Street
Denver, Colorado 80202-2405

U.S. Fish & Wildlife Service
Region 6, Denver Regional Office
PO Box 25486
Denver, Colorado 80225

APPENDIX A
IICEP ADDRESSEE LIST

Bureau of Land Management
Granite Tower Building
222 N. 32nd Street
Billings, Montana 59101

Veterans Administration Medical & Regional Office Center
Attn: Rob Bean
VAMROC
Facilities Management (139)
Fort Harrison, MT 59636

Seattle District COE
Attn: Mark Carlson
4735 Marginal Way S
Seattle, WA 98134-2385

Lewis & Clark County
Planning Department
Robert Rasmussen
PO Box 1725
Helena, MT 59624

Montana Department of Transportation
Attn: Patricia Saindon
Administrator of Transportation Planning
PO Box 201001
Helena, MT 59620-1001

Office of the US Property & Fiscal Officer for Montana
Attn: Colonel Donnelly
PO Box 4789
Helena, MT 59604-4789

RECEIVED
JUL 22 1997

MONTANA STATE HISTORIC PRESERVATION OFFICE
NHPA Section 106 \ Other Consultation

This form constitutes a record of your consultation with the Montana Historic Preservation Officer on a particular project and is the official SHPO reply. The dates of SHPO actions appear in the appropriate boxes.

Please Route This Form To:	Mr. Jim Wertman, AIA CTA Architects Engineers P.O. Box 1439 Billlings, Montana 59103

Your Agency Requested Consultation with the Montana State Historic Preservation Officer (SHPO) on this Project under this Law or Regulation:	**Section 106**

PROJECT NUMBER		**AGENCY**		**OTHER Agency**	
PROJECT NAME and Other Descriptions	MT ARNG Fort William Henry Harrison Helena	**Dates and Separate Requests to SHPO on This Project**	4-23-97		
THIS FORM documents		1	**individual actions.**		

Memo(s) to Sender

Dear Mr. Wertman:

The above referenced plan needs to include sections on how the MT ARNG intends to comply with Section 106 of the National Historic Preservation Act, as amended, and codified in 36CFR800.

Clearance of buildings for demolition by the Base HPP Committee does not relieve the MT ARNG of its responsibilities under Section 106.

Please give me a call if you have any questions.

Sincerely,

Lon Johnson

DETERMINATION OF ELIGIBILITY The SHPO Has Considered Whether, per Your Request, Sites Either Meet or Do Not Meet the Criteria of the National Register of Historic Places. The Finding of the SHPO Is as Follows:	**Sites which Meet National Register Criteria**		**Sites Not Meeting National Register Criteria**	

Criterion A Findings	Criterion B Findings	Criterion C Findings	Criterion D Findings

DETERMINATIONS OF EFFECT The shpo has considered whether this undertaking will have an affect on significant historic properties. The finding of the shpo is as follows:	**No Eligible or Listed Properties Are Within the Area of**		**The Project Will Have NO EFFECT on These**	
	Potential Effect		**Eligible Properties**	

Montana Historic Preservation Consultation form Page 2 July 21, 1997

Descriptions of Effects on Eligible Property Using 36 CFR 800.9		**The Effect on These Properties Is:**	
		Adverse	
		Not Adverse.	
Other Comments:			
Reviewer Signatures	Jon Johnson	7-21-97	:Dates

CTA
ARCHITECTS
ENGINEERS

January 22, 1998

Montana State Historic Preservation Office
ATTN: Joseph Warhank
PO Box 201202
Helena, MT 59620-1202

Joseph,

This letter is a follow-up to our phone conversation regarding the removal or demolition of existing structures at the Army National Guard Base at Fort Harrison.

Attached is the document I referred to in our phone conversation. Also attached is a base map of the facility that shows the locations of the proposed projects and the affected existing buildings. As you can see, the Environmental Assessment we are working on deals with the development of 18 projects (not all are buildings) at the Base over the next 10 year time period. In addition to the other criteria being reviewed during the EA, we would also like to use this document to provide clearance for demolition of the affected existing buildings when needed.

The projects being reviewed and the buildings affected are as follows:

- 1A - T503, T504, T505 & T506(23-All) or T519(23) & T520(24), depends upon location
- 1B - None
- 1C - None
- 1D - T211(22), T502(23)
- 1E - T502A(23)
- 2A - None
- 2B - T509(23), T525(24), T526(Not Listed)
- 2C - None
- 2D - None
- 3A - None
- 3B - None
- 3C - None
- 4A - None
- 4B - None
- 4C - None
- 4D - None

The numbers in parenthesis after the building numbers indicate which page of the attached book that the buildings are described. Only building T526 is not listed. If 'None' is listed, then the project referenced is being built in an area where no buildings exist that would be affected.

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Ideally, we would be able to use the attached information with some limited follow-up, primarily photographs, to obtain clearance from SHPO for either removal or demolition of the affected buildings. The budget for the project does not allow for detailed research on these buildings.

I'll call later next week to discuss and see how we can proceed from here. Thanks for your time and help.

Sincerely,

CTA ARCHITECTS ENGINEERS

Jim WERTman

Jim Wertman

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RECEIVED
FEB 09 1998

MONTANA STATE HISTORIC PRESERVATION OFFICE
NHPA Section 106 \ Other Consultation

This form constitutes a record of your consultation with the Montana Historic Preservation Officer on a particular project and is the official SHPO reply. The dates of SHPO actions appear in the appropriate boxes.

Please Route This Form To:	CTA Architects POB 1439 Billings, MT 59103

Your Agency Requested Consultation with the Montana State Historic Preservation Officer (SHPO) on this Project under this Law or Regulation:	**Section 106**

PROJECT NUMBER		**AGENCY**	Army Natl. Guard	**OTHER Agency**	
PROJECT NAME and Other Descriptions	FT Harrison Demos	**Dates and Separate Requests to SHPO on This Project**	01/26/98	Josef	

THIS FORM documents		**individual actions.**

Memo(s) to Sender	Dear Jim: This is a follow up on our phone conversation today. We look forward to working with the National Guard on this issue. After we look at the buildings for their edibility, we can move on to discussing mitigation. This would be necessary if it is decided that the building must go.

DETERMINATION OF ELIGIBILITY **The SHPO Has Considered Whether, per Your Request, Sites Either Meet or Do Not Meet the Criteria of the National Register of Historic Places. The Finding of the SHPO Is as Follows:**	**Sites which Meet National Register Criteria**		**Sites Not Meeting National Register Criteria**	

Criterion A Findings	**Criterion B Findings**	**Criterion C Findings**	**Criterion D Findings**

DETERMINATIONS OF EFFECT **The SHPO has considered whether this undertaking will have an effect on significant historic properties. The finding of the SHPO is as follows:**	**No Eligible or Listed Properties Are Within the Area of**		**The Project Will Have NO EFFECT on These**	
	Potential Effect		**Eligible Properties**	

Descriptions of Effects on Eligible Property Using 36 CFR 800.9		**The Effect on These Properties Is:**	
		Adverse	
		Not Adverse.	

Other Comments:			
Reviewer Signatures	Josef J Warhank	5 Jan 98	:Dates

PLACE THE DATE OF THE APPROPRIATE ACTION IN THE SPACE PROVIDED					
No Data		Technical Assistance		National Register Submission	
Federal File Search		Public Education		National Register Listing	
Federal Inventory Review		Effect		Eligibility Determination	
State\Local Inventory Review		EA or EIS review		No Comment	
Inventory Submitted under MOU		Review under PA\MOA		Tax Review	
Development of PA\MOA		Signed PA		Signed Antiquities Permit	
Signed MOA		Review under Antiquities Act			

SECTION 1.0: PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States is considering a series of projects at the Montana Army National Guard (MT ARNG) installation at Fort William Henry Harrison, Montana over the next 10 year period. Agencies involved in this action include the Montana Army National Guard, the Army Reserve and the US Naval Reserve.

The projects are varied in size and scope and are all located within the boundaries of the existing federal property on and adjacent to the Fort Harrison site. The projects included in this action are necessary to replace or support the current facilities and mission of the MT ARNG at this installation.

The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in their decision-making process. The President's Council on Environmental Quality (CEQ) issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental analysis.

The Environmental Impact Analysis Process is governed by Army Regulation 200-2, *Environmental Effects of Army Actions*, and is the mechanism by which the Army assures its decisions include an understanding of potential environmental consequences. The CEQ regulations are used in conjunction with Army Regulation 200-2 to determine the appropriate documentation with regard to the level of environmental analysis.

1.2 PURPOSE AND NEED

Fort Harrison is the only Army training post in Montana and serves as the focal point for the majority of all Army training in Montana. Fort Harrison's mission is to provide training areas and facilities for the Army National Guard~~, Army Reserve, and active duty military~~. Fort Harrison contains a cantonment area with billeting, messing, latrine facilities, and site support operations, ranges for small arms qualification, a drop zone, and a helicopter landing area.

NG only mission.
Others based on availability

Fort Harrison is classified as a ~~c~~ C collective Training Area (CTA). CTAs are designed to support individual and collective training up to battalion level. CTAs include small arm ranges, cantonment facilities, and maneuver areas. In addition to the above military personnel, the ranges and training areas are also utilized by the local law enforcement agencies, fire department, and various other state and federal agencies.

Because of the number of projects involved in this EA, individual projects have been classified according to use and assigned to 'Action Groups'. Individual projects within each Action Group are complementary to the others in both their intended use and anticipated affect on the environment.

Comments from
Col Donnelly & LTC Stricke

SECTION 2.0: DESCRIPTION OF THE PROPOSED ACTION

2.1 PROJECT(S) DESCRIPTION

The United States is proposing to upgrade and expand the existing MT ARNG facility at Fort Harrison, Montana over the next 10 year period. Seventeen separate projects have been identified that may be implemented by the MT ARNG(16) and the US Navy USA Reserves/Seabees(1) at this site. This EA involves an overall review of the cumulative environmental consequences of the 17 separate projects.

Proposed locations for all 17 projects are included on the site drawing that is attached.

Because of the number of projects contained in this EA and the variety of uses, the projects were organized into 4 separate groups with similar use and characteristics. The groups, referred to as 'Action Groups', along with a brief description of each project are listed below.

ACTION GROUP 1 - STORAGE & SUPPORT FACILITIES

These facilities are made up of a series of storage & related facilities required to support the current mission(s) of the existing Guard units utilizing the Fort Harrison complex. These projects do not involve the addition of any personnel to the installation. Projects in this grouping include:

3

1A USPFO Warehouse- indoor heated warehouse space for USPFO ~~purchasing office~~. This space will replace space in a current facility that no longer meets the needs of the USPFO. Two alternative locations are being considered. One at the secondary base entrance provides easy and convenient access for over the road deliveries. The second location is closer to the existing railroad spur line on the base and would provide better access for railway deliveries. Personnel would be relocated from the existing facility.

1B CSMS Cold Storage Warehouse- as noted, this will be a cold storage warehouse in support of the Combined Support Maintenance Shop to house existing equipment and materials that currently are stored outside. Because of the support nature of this facility and need for security, the structure will be housed in the existing CSMS fenced yard area. This building will not require the addition of any new personnel.

1C Organizational Maintenance Shop #3 Cold Storage Warehouse- as noted, this will be a cold storage warehouse in support of the OMS #3 to house existing equipment and materials that are currently stored outside. Because of the support nature of this facility and the need for security, the structure will be housed in the existing OMS #3 fenced yard area. This building will not require the addition of any new personnel.

1D ~~Mini Storage Warehouse- indoor cold storage units for temporary storage of personal belongings of base personnel. As this facility will support on-site personnel, it is being located near/adjacent to the existing barracks and the new Battalion Support Center. This building will not require the addition of any new personnel.~~

MTOE + CTA equipment from outlyin units that utilize Fort Harrison on a recurring basis.

SECTION 2.0: DESCRIPTION OF THE PROPOSED ACTION

ACTION GROUP 1 - STORAGE & SUPPORT FACILITIES - CONTINUED

1E Battalion Maintenance Shelter - Outdoor ~~Warehouse- indoor heated~~ area for surface & cold vehicle maintenance ~~temporary storage~~ of ~~equipment and materials brought to the base and~~ utilized by off site military units involved in training at the base. The proposed location is near the CSMS shop and yard area to allow easy access to both of those facilities. This facility will not require any new personnel, only support existing units already using the base on a temporary basis for training purposes.

1F Wash Rack- this facility will provide a contained area for cleaning Guard vehicles that are used in the remote training sites. Vehicles need to be cleaned prior to providing maintenace or parking in the storage yards. Currently this function is performed in front of the UTES building and other locations on base. This facility will provide a central location for this function where the washing process and discharge of waste water can be controlled. The location will be immediately adjacent to the UTES facility and UTES storage yard for ease of access. This facility is in support of the existing mission and will not require any new personnel.

(1G) USAR Cold Storage Building — off

ACTION GROUP 2 - TRAINING/ADMINISTRATIVE FACILITIES

These facilities are more technical in nature and involve the construction of administrative support and training facilities Projects in this grouping include:

2A Simulation Center- this building will provide a centralized location for all existing and future simulation equipment at Fort Harrison. Currently the equipment is located at several locations on base. The Simulation Center will be in support of the current mission of the MT ARNG. The building will be located adjacent to the existing portable Tank Simulation Unit and near the majority of other classroom training areas. This building will not require any new personnel.

2B MILES/TASC Building- this building will replace the existing MILES/TASC facility that is being temporarily housed in building P64. This building will be located adjacent to the new Battalion Support Center for ease of access by personnel at that facility. This building will not require any new personnel.

2C Helena Armed Forces Reserve Center- this facility will provide administrative space for approximately 200 MT ARNG employees currently housed on site in temporary quarters or in the Reserve Center in Helena. This building will be located on the south end of the site to allow easy access to the facility by off-site personnel. Approximately ~~150~~ 100 personnel currently located off site will use this facility on a daily basis. The remainder of the personnel using this facility are currently housed on site in temporary quarters.

2D Naval Reserve Center- this building will provide a replacement facility for the Naval Reserve group currently housed in Missoula, Great Falls and Billings. It is being located on the southwest corner of the site, away from the majority of the MT ARNG facilities and with easy access the main base entry. Approximately ~~5~~ 7-(full time Naval Reserve personnel will use the facility on a daily basis. The remainder of the use will be on week-ends throughout the year.

SECTION 2.0: DESCRIPTION OF THE PROPOSED ACTION

2.2 ISSUES

BUILDING DEMOLITION

Projects 1A, 1D, 1E, 2B & 3A will involve the demolition of existing buildings as follows:

- 1A: Site 1, Buildings T517, T519 & T520; Site 2, Buildings T503, T504, T505, T506
- 1D: T211, T212, T502
- 1E: T502A
- 2B: T509, T525, T526
- 3A: Existing wooden ammo bunkers - 3

With the exception of T517, T502A & T526, all have been cleared by the Base HPP Committee for demolition. As part of this EA, these three buildings will be evaluated by the committee and cleared for demolition. If the Committee decides the buildings are historic and cannot be removed, alternate sites will be considered.

HAZARDOUS MATERIALS

A Preliminary Assessment for hazardous materials and a follow up Site Inspection Field Work Plan for the Fort Harrison area have been completed by the MT ARNG. No environmental hazards were identified on any of the properties involved in this EA. The previous environmental/hazardous materials studies and the Site Inspection Field Work Plan are available for review in the MT ARNG Environmental Office.

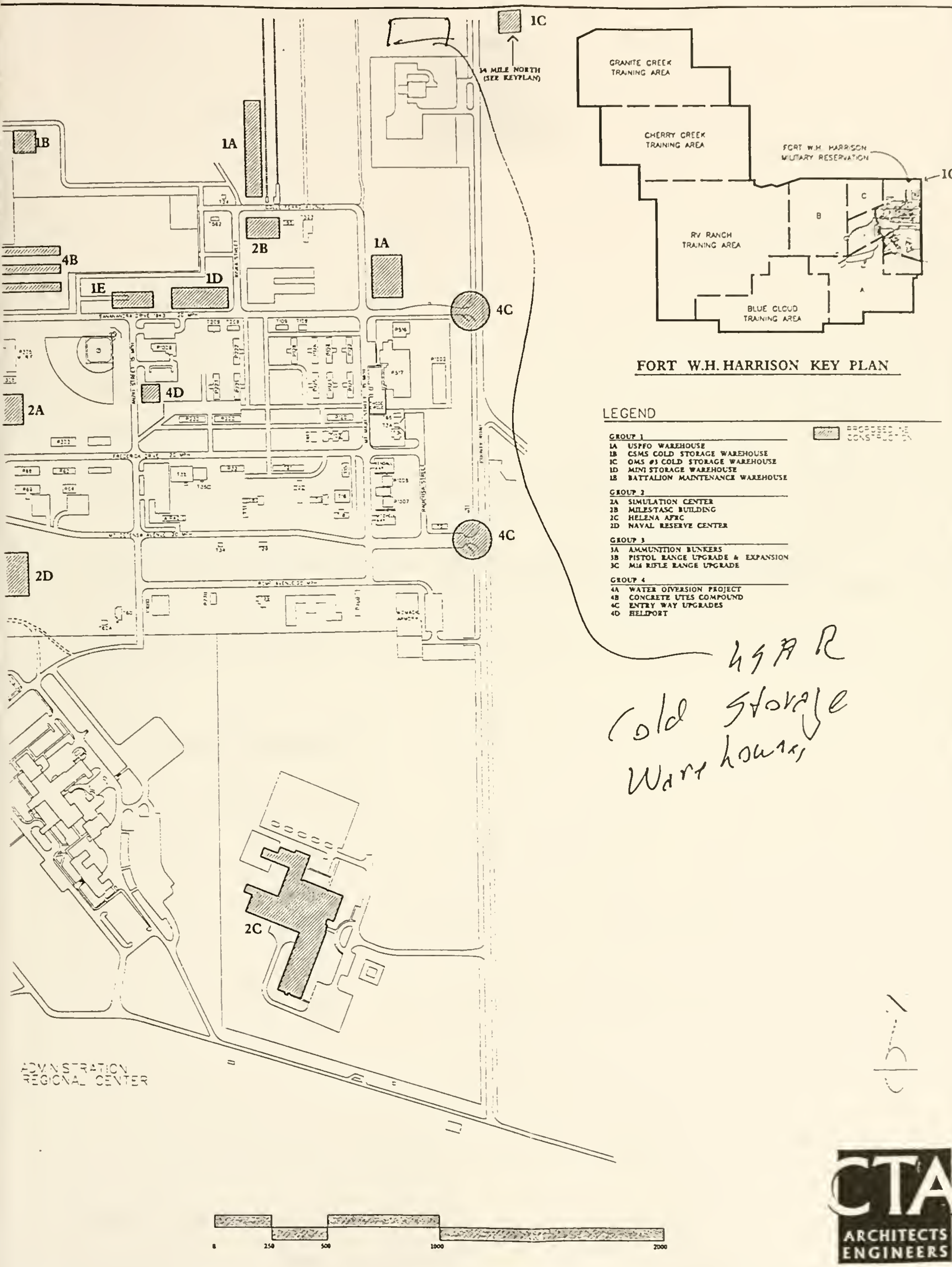
TRAFFIC

With the exception of projects 2B/Helena Armed Forces Reserve Center and 2D/Naval Reserve Center, all projects are in support of the existing mission and functions currently located on base. As such, no additional traffic is expected to be generated by those facilities.

Project 2B/Helena AFRC will relocate approximately 150 personnel from the Army National Guard Headquarters and Army Reserve Center in Helena to Fort Harrison and will thus create additional traffic at the base. The remainder of the personnel using this facility, approximately 50, are currently in other locations on base.

Project 2D/Naval Reserve Center will relocate the personnel currently using the existing Naval Reserve Centers that are being closed and will also create additional traffic. Current information indicates approximately ~~3~~ 7-8 full time positions will be created by this action. It has not been determined how many reserve visits will take place or during what time periods.

The impact of the additional traffic created by these two actions will be evaluated in this EA.



FORT W.H. HARRISON KEY PLAN

LEGEND

▨ PROPOSED NEW CONSTRUCTION

GROUP 1
1A USPFO WAREHOUSE
1B CSMS COLD STORAGE WAREHOUSE
1C OMS #3 COLD STORAGE WAREHOUSE
1D MINI STORAGE WAREHOUSE
1E BATTALION MAINTENANCE WAREHOUSE

GROUP 2
2A SIMULATION CENTER
2B MILES/TASC BUILDING
2C HELENA AFRC
2D NAVAL RESERVE CENTER

GROUP 3
3A AMMUNITION BUNKERS
3B PISTOL RANGE UPGRADE & EXPANSION
3C M16 RIFLE RANGE UPGRADE

GROUP 4
4A WATER DIVERSION PROJECT
4B CONCRETE UTES COMPOUND
4C ENTRY WAY UPGRADES
4D HELIPORT

45A R

Cold Storage
Warehouse

CTA
ARCHITECTS
ENGINEERS

CTA
ARCHITECTS
ENGINEERS

September 4, 1997

Office of the USPFO for Montana
ATTN: Colonel Donnelly
PO Box 4789
Helena, MT 59604-4789

Colonel Donnelly,

This letter is to acknowledge receipt of you response to the 'scoping' letter on the Environmental Assessment we are currently preparing for a variety of projects at Fort Harrison.

The comments provided by your agency have been incorporated into the 'Draft EA' that will be forwarded to Major Steve Martinka for distribution on September 5, 1997. Any additional comments you may have can be incorporated into the 'Final' EA that will be issued later this fall.

Thanks for your input. Please feel free to contact either Major Martinka or myself if you have any questions.

Sincerely,

CTA ARCHITECTS ENGINEERS

Jim Wertman

Jim Wertman

\\ctacorp\.m-drv.blgs.cta\jobs\mngt\ea\corr\uspfo.doc

1500 Poly Drive P.O. Box 1439 Billings, Montana 59103 406. 248. 7455 1. 800. 780. 7455 Fax: 406. 248. 3779
http://www.ctasvcs.com E-mail: info@ctasvcs.com

Facilities Management Service
VAM&ROC
Fort Harrison, MT 59636

July 1, 1997

JUL 8 1997

CTA Architects Engineers
Attn: Jim Wertman
PO Box 1439
Billings, MT 59103

Dear Sir,

Thank you for the opportunity to review and comment on the proposed construction projects on Fort William Henry Harrison. The Department of Veteran's Affairs does have some concerns with the ongoing expansion of the National Guard Facility. The National Guard shares the use of some VA owned structures such as our main water line and the facility sewer lines that drains into the VA owned/maintained sewage lagoon system. We have had preliminary discussions with the National Guard to offset some of the concerns with these structures. I will discuss these issues as well as raise some questions brought out by your Scoping Letter Draft.

1. What improvements in signing are planned? With the large Armed Forces Reserve Center being constructed so close to our main gate, is there plans to clearly identify both facilities as being separate entities?

2. How large is the Naval Reserve Center? How many Reservists are going to be using this building on weekends? Is there anticipation of these Reservist using the BOQ/BEQ for weekend drills? Is there anticipated lawns to be cared for and where will that water come from?

3. There is no mention of the Training Center in this analysis. What are the population and utility, (water), impacts of this building?

4. People who travel between the AFRC building and the National Guard site may be tempted to use the VA grounds as a short cut. Is there a road between the two sites planned or at least signage planned to direct them to the proper locations?

5. Is there any anticipated noise level increases, (weapons firing, traffic, construction), that may hinder the quiet that a hospital requires for patient comfort?

6. We have continuing concerns in the area of fire protection. The National Guard Chain of Command is looking at the issue from their perspective. I wish to restate that we do not have the capability to fight a structural fire throughout the facility. The response time from the city of Helena to fight a structural fire is approximately eight to ten minutes. What are the National Guard plans for fire suppression in this time period, (i.e.

sprinkler systems)? We also do not have the capability to fight any aviation fire that may occur with the use of a helipad or aviation training facility. Will any of these new facilities be sprinklered or alarmed? If they are to be alarmed where do they alarm to?

7. It would be helpful to the VA to know which building are to be destroyed and what impacts they may have for traffic, noise, or fire protection.

8. What is the square footage of each of the new building under construction or planned for construction in the next ten years?

The National Guard is hiring a firm to perform an assessment of the utility impacts of the proposed construction. Some of these questions may be answered in that study. We appreciate your willingness to work with us in getting the answers to the questions above. If you require clarification or additional information please contact me at (406) 447-7987.

Sincerely,

Robert Bean

Robert E. Bean
Chief, Facilities Management Service

DEPARTMENT OF VETERANS AFFAIRS
Medical and Regional
Office Center
Fort Harrison MT 59636

May 8, 1997

In Reply Refer To: 436/00

Major General John E. Prendergast
Adjutant General
Montana National Guard
1100 North Last Chance Gulch
Helena, MT 59601

RECEIVED
MAY 12 1997
ADJUTANT GENERAL

Dear General Prendergast:

I am writing you to advise the National Guard of several issues relative to the current and planned construction at the Guard facilities. The three areas of concern include sewage, water and irrigation water. These issues have been brought to my attention by the staff at my facility and will impact the activity at Fort Harrison.

The first issue concerns the capacity of the sewage lagoons used jointly by the VA and the National Guard. As you know, the VA constructed and maintains the lagoons on land owned by the National Guard. In a 1987 study conducted by the National Guard, the limits of these lagoons was defined. It indicated the need to modify the lagoons should any major addition to load occur. With the addition of your Toilet project, dormitory, and the planned new armories, it is our opinion that your designs should include necessary modifications to the lagoons to accommodate the additional effluent. We have carefully monitored our use and have offset the new addition to our facility with a commensurate reduction in overnight patient stays.

The second issue concerns the water capacity of the main line from Highway 12 to Fort Harrison. The VA owns and installed this water main. The National Guard, in turn, takes its water from this main. Our concern lies in the capacity of the line to serve our mutual needs. Here again, we are requesting that you include in your construction evaluation of capacity and modifications necessary to preserve adequate water flow to our hospital.

The third concern is irrigation watering. If you intend to tap the existing underground wells, or drill new wells, your design staff need to consult with ours. In the past, this has been a major concern for our common neighbor, Mr. Schatz, who has the preemptive water rights.

Finally, I need to apprise you of a budgetary issue. The Fire Department at the VA is at risk given the budget cuts we will experience under the balanced budget initiatives being conducted on a national basis. In that light, we do not anticipate the ability to provide free fire fighting services in the future (Fiscal Year 1998). As this situation progresses, I will keep you informed.

I look forward to your reply on the above issues.

Sincerely,

JOSEPH M. UNDERKOFLER
Director

CTA
ARCHITECTS
ENGINEERS

September 4, 1997

Facilities Management Service
VAM&ROC
ATTN: Rob Bean
Fort Harrison, MT 59636

Mr. Bean,

This letter is to acknowledge receipt of you response to the 'scoping' letter on the Environmental Assessment we are currently preparing for a variety of projects at Fort Harrison.

In response to your comments and other communications with the MT ARNG, studies have been initiated that will review the status of both the water and sanitary sewer systems that serve the area of the base and the VAMROC. These reports will include data you requested on building sizes, occupancy, etc. When completed, the results of those studies will be shared with your agency.

Also, a Traffic Study was commissioned as part of the EA and will be included in the final report. That study, completed by Damschen & Associates, indicates that the additional traffic generated by the additional 150 +/- employees on the base as a result of these projects will not significantly affect the traffic or pavement quality in the area. A copy of that study may be obtained through Major Steve Martinka at Fort Harrison.

Investigation of noise issues in the EA concludes that the facilities and improvements resulting from the projects in this EA will have no significant impact on the surrounding environment, including noise. The firing ranges will be rebuilt, but noise levels with respect to your facility will remain at the existing level or lower because of realignment.

With respect to the signage issue, one of the projects in the EA includes improvements to signage at the two base entries. As part of that resigning, and with the Armed Forces Reserve Center projected to come on line in the next few years, we are recommending the MT ARNG consider additional signage at the intersection of Williams Street and Birdseye Road to help direct traffic. That signage, if provided, will be included with one of the projects noted above.

Thanks for your input. Please feel free to contact either Major Martinka or myself if you have any questions.

Sincerely,

CTA ARCHITECTS ENGINEERS

JIM WERTMAN
Jim Wertman
\\ctacorp\.m-drv.blgs cta\jobs\mngt\ea\corr\vamroc.doc

1500 Poly Drive P.O. Box 1439 Billings, Montana 59103 406.248.7455 1.800.780.7455 Fax: 406.248.3779
http://www.ctasvcs.com E-mail: info@ctasvcs.com

DEPARTMENT OF ENVIRONMENTAL QUALITY

PERMITTING & COMPLIANCE DIVISION

MARC RACICOT, GOVERNOR

METCALF BUILDING
1520 EAST SIXTH AVENUE

STATE OF MONTANA

(406) 444-4323
FAX (406) 444-1374

PO BOX 200901
HELENA MONTANA 59620-0901

June 30, 1997

JUL 1 1997

Jim Wertman
CTA Architects Engineers
PO Box 1439
Billings, MT 59103

Re: Montana Army National Guard Projects Environmental Assessment

Dear Mr. Wertman:

The Department of Environmental Quality (DEQ) Permitting & Compliance Division has reviewed the information submitted concerning the above referenced projects. The projects appear to require coverage under the General Discharge Permit for Storm Water Associated with Construction Activity.

The decision that permit coverage is required is based on 17 projects taking place in the next 10 years. Development of these projects is likely to reach the five (5) acre requirement in clearing, grading and excavating activities. Please find enclosed the regulatory requirements for permit coverage.

There is an application review fee and an annual associated with permit coverage. The minimum application review fee is $400 and the minimum annual fee is $250. I have enclosed an application packet for your use.

Please call or write should you have additional questions or concerns.

Sincerely,

Roxann Lincoln

Roxann Lincoln CPSS
MPDES Storm Water Coordinator

TRL.1497

"AN EQUAL OPPORTUNITY EMPLOYER"

(ix) *Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA;*

(x) *Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than five acres of total land area which are not part of a larger common plan of development or sale;*[2]

Any construction activity that results in the disturbance of five acres of land or more in total is covered by the rule. Such activities may include road building (including those associated with oil and gas production), construction of houses, office buildings, industrial buildings, pipelines, and demolition activity. This does not apply to agricultural or silvicultural activities, which are exempt from NPDES permit requirements under 40 CFR 122.3.

"Part of a larger common plan of development or sale" describes a situation in which multiple construction activities are occurring on a contiguous area. The activities could be taking place at different times on different schedules. The key is that these different construction activities are part of one common plan, common blueprint, or development.

(xi) *Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, 4221-25, (and which are not otherwise included within categories (ii)-(x));*

20	Food and kindred products
21	Tobacco products
22	Textile mill products
23	Apparel and other finished products made from fabrics and similar materials
2434	Wood kitchen cabinets
25	Furniture and fixtures
265	Paperboard containers and boxes
267	Misc. converted paper products
27	Printing, publishing, and allied industries
283	Drugs
285	Paints and allied products
30	Rubber and miscellaneous plastics products
31	Leather and leather products Does not include 311 311 - Leather tanning and finishing
323	Products of purchased glass
34	Fabricated metal products, except machinery and transportation equipment Does not include 3441 3441 - Fabricated structural metal
35	Industrial and commercial machinery and computer equipment
36	Electronic and other electrical equipment and components, except computer equipment

---

[2] See discussion of 9th Circuit Court Decision on page 7.

CTA
ARCHITECTS
ENGINEERS

September 4, 1997

State of Montana
Department of Environmental Quality
Permitting & Compliance Division
PO Box 2009901
Helena, MT 59620-0901

This letter is to acknowledge receipt of you response to the 'scoping' letter on the Environmental Assessment we are currently preparing for a variety of projects at Fort Harrison.

The MT ARNG will coordinate with your agency on a project by project basis as the projects are developed over the next 10 years at Fort Harrison. Any required permits will be obtained as the projects are developed.

Thanks for your input. Please feel free to contact either Major Martinka or myself if you have any questions.

Sincerely,

CTA ARCHITECTS ENGINEERS

Jim Wertman

Jim Wertman

\\ctacorp\.m-drv.blgs.cta\jobs\mngt\ea\corr\deq.doc

1500 Poly Drive P.O. Box 1439 Billings, Montana 59103 406.248.7455 1.800.780.7455 Fax: 406.248.3779
http://www.ctasvcs.com E-mail: info@ctasvcs.com

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENTS OF THE ARMY AND AIR FORCE
HEADQUARTERS, MONTANA NATIONAL GUARD
P.O. Box 4789 (1100 North Main)
Helena, Montana 59604-4789

27 January 1998

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ► 2

To Mr. Jim Wertman	From CPT Curt Reynolds
Dept./Agency CTA Arch/Engr.	Phone # 444-7943
Fax # (406) 248-3779	Fax # (406) 444-9444
NSN 7540-01-317-7368 5099-101	GENERAL SERVICES ADMINISTRATION

Environmental Program
Manager

Mr. Jim Wertman
CTA Architects Engineers
1500 Poly Drive/P.O. Box 1439
Billings, MT 59103

Dear Mr. Wertman:

I have now received your comments on the Fort Harrison Environmental Assessment (EA). I apologize for any delays since this office did not receive your first response. Pursuant to our telephone conversation on 21 January 1998, below is the input you needed to begin completion of the Fort Harrison EA.

Montana Army National Guard comments in response to National Guard Bureau's input:

1. (3.a(1) Petroleum, Oil and Lubricants (POL). Diesel is the only fuel stored on Fort Harrison. The diesel is stored at the Unit Training Equipment Site (UTES) in two above ground double walled tanks. Diesel is dispensed through pumps and meters record the input/output. All Fort Harrison diesel is received via commercial trucks. Fuel spills kits are kept on site.

2. All gasoline is purchased in Helena with U.S. Government credit cards.

3. Fort Harrison is a turn in point for used oil which supports the heat recovery program. Oil recovery is gathered from Montana Army National Guard shops and includes our oil filter crushing program. Shops involved with the Fort Harrison oil recovery program include: Combined Support Maintenance Shop (CSMS), UTES, Organization Maintenance Shops (OMS) 1,2,3 & 5.

"Fit to Win Through Quality Service"

4. Oil Recovery amounts: 1997 = 1,636 gallons; 1996 = 1619 gals; 1995 = 838 gals.

5. (3.1A) The proposed United States Fiscal & Property Office (USPFO) will replace the existing USPFO. The current USPFO building will not be abandoned when the new USPFO is constructed. The current plan is to use the existing USPFO building as office space and storage.

6. (7.1a) The United States Army Training and Doctrine Command (TRADOC) sets the guidance for weapons ranges. They consider many factors when determining the size of weapons range. This includes the type of weapon involved, maximum ranges of the weapon, safety factors, location of the training area, nearby civilian populations, ect....

7. (7.1b) The range is considered non-standard because the unique training needs of Fort Harrison and the range site specific arrangement.

Point of contact is CPT Curt Reynolds, (406) 444-7943.

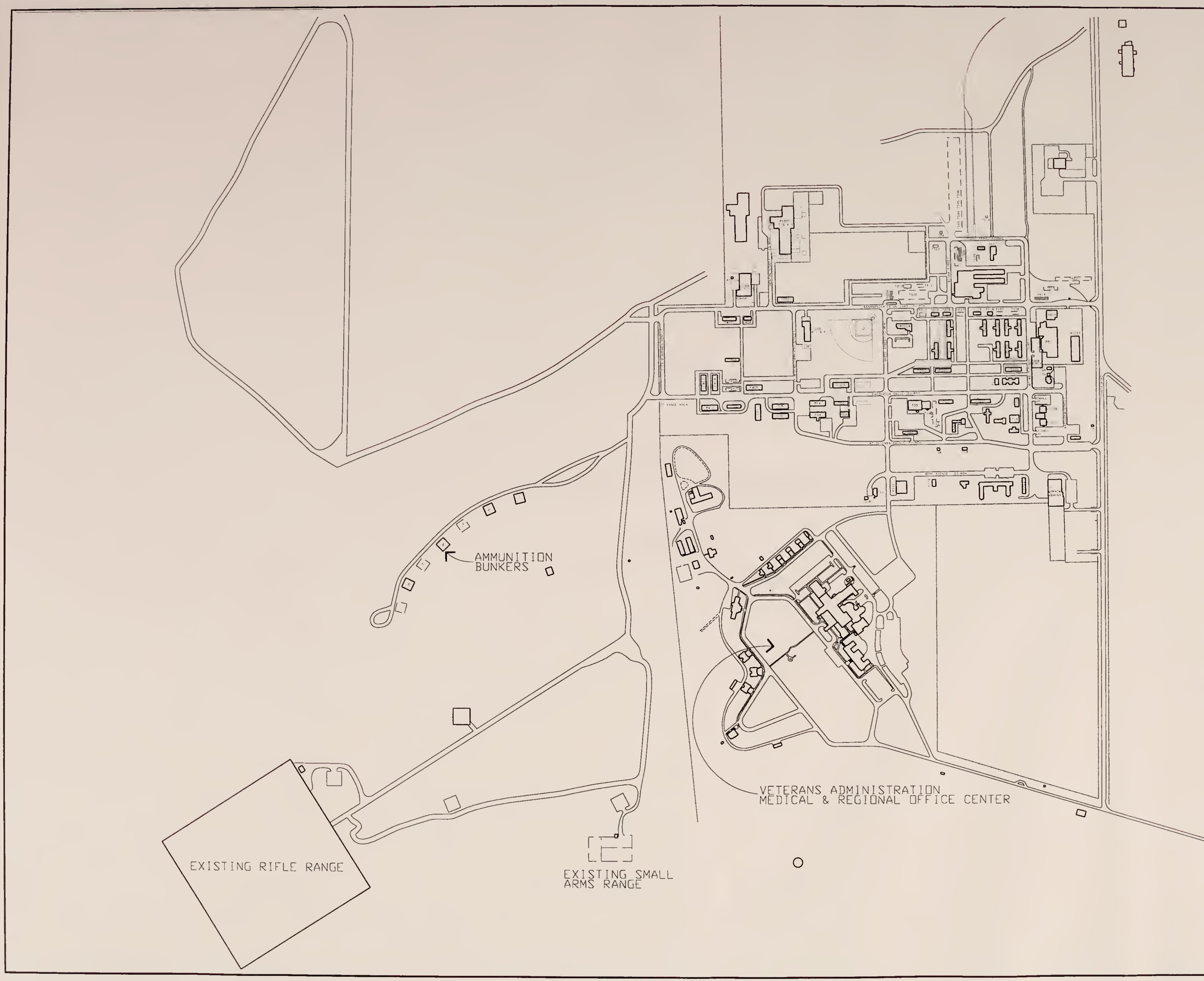
Sincerely,

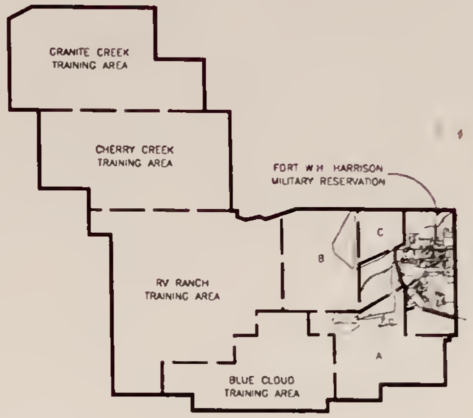
for Curt Reynolds
JOHN B. WHEELER
Environmental Program Manager

APPENDIX B

APPENDIX B: BASE DRAWINGS

This Appendix contains a base map indicating the location of the proposed projects within the Fort Harrison Complex. Also included is an existing base map.


AMMUNITION BUNKERS
EXISTING RIFLE RANGE
EXISTING SMALL ARMS RANGE
VETERANS ADMINISTRATION MEDICAL & REGIONAL OFFICE CENTER


GRANITE CREEK TRAINING AREA
CHERRY CREEK TRAINING AREA
FORT W.H. HARRISON MILITARY RESERVATION
RV RANCH TRAINING AREA
BLUE CLOUD TRAINING AREA
A
B
C

FORT HARRISON KEY PLAN

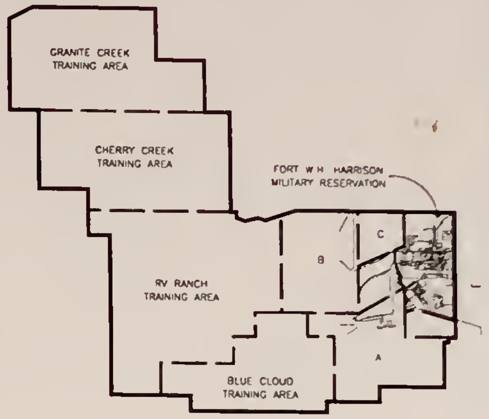
LEGEND

- ▭ EXISTING BUILDINGS
- ⬚ BUILDINGS SCHEDULED FOR DEMOLITION
- ▨ BUILDINGS NOT SCHEDULED FOR DEMO. BUT MAY NEED TO BE REMOVED FOR FUTURE CONSTRU...

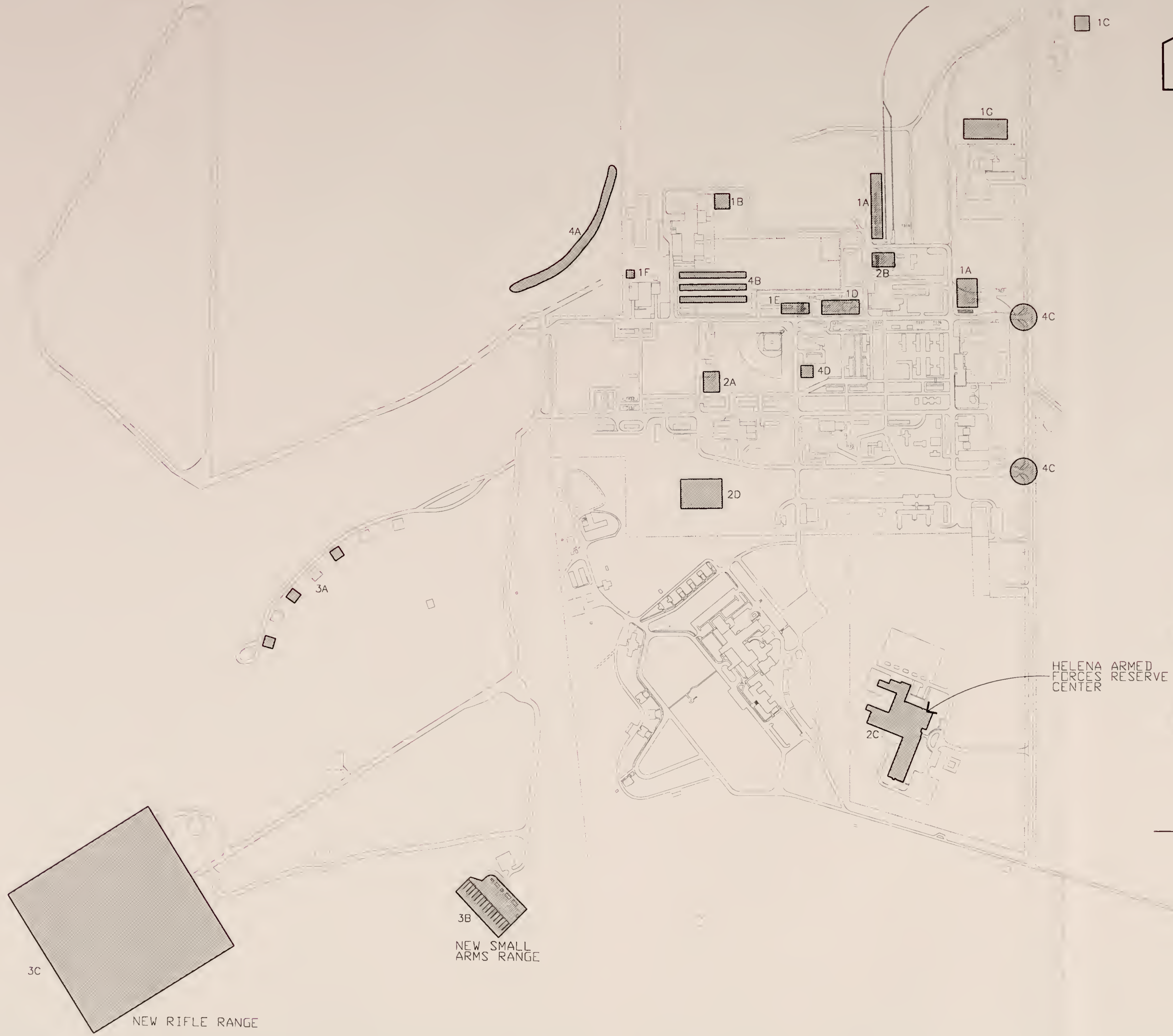
SCALE : 1" = 300'-0"

FORT HARRISON
EXISTING SITE PLAN

CTA
ARCHITECTS
ENGINEERS


GRANITE CREEK TRAINING AREA
CHERRY CREEK TRAINING AREA
FORT W.H. HARRISON MILITARY RESERVATION
RV RANCH TRAINING AREA
B
C
A
BLUE CLOUD TRAINING AREA

FORT HARRISON KEY PLAN



LEGEND

GROUP 1
1A USPFO WAREHOUSE
1B CSMS COLD STORAGE WAREHOUSE
1C CMS #3 COLD STORAGE WAREHOUSE
1D MIN. STORAGE WAREHOUSE
1E BATTALION MAINTENANCE SHELTER
1F WASHRACK
1G USAR COLD STORAGE WAREHOUSE

GROUP 2
2A SIMULATION CENTER
2B MILES/TADS BUILDING
2C HELENA AFRC
2D NAVAL RESERVE CENTER

GROUP 3
3A AMMUNITION BUNKERS
3B PISTOL RANGE PURCHASE & EXPANSION
3C M16 RIFLE RANGE [illegible]

GROUP 4
4A WATER DIVERSION PROJECT
4B CONCRETE UTES COMPOUND
4C ENTRY WAY UPGRADES
4D HELIPORT

▨ PROPOSED NEW CONSTRUCTION

SCALE : 1" = 300'-0"

FORT HARRISON 10 YEAR CONSTRUCTION PLAN

CTA
ARCHITECTS ENGINEERS

APPENDIX C

APPENDIX C: PUBLIC NOTICE DRAFT

This Appendix contains a draft copy of the public notice for the Environmental Assessment at Fort William Henry Harrison.

The public notice was published in the Helena, Montana *Independent Record* on Wednesday, March 11, 1998.

This notice requested comments be delivered to CTA Architects Engineers within the 30 day review period. At this time of publication of this Pre-Final EA, public comments have not been received.

MONTANA ARMY NATIONAL GUARD SEEKS PUBLIC REVIEW AND COMMENT ON DRAFT ENVIRONMENTAL ASSESSMENT

The Montana Army National Guard is seeking public review and comment on the draft of a Pre-Final Environmental Assessment (EA) that has been prepared to document a variety of proposed site improvements at Fort Harrison, Montana over the next 10 year period.

The draft EA will be on file at the Environmental Office, Building 230, Fort Harrison, the Lewis and Clark Public Library, and the Montana State Library beginning March 12, 1998 and ending April 10, 1998. Questions or comments on the draft EA should be directed to the following within that 30 day review period:

Jim Wertman, AIA
CTA Architects Engineers
1500 Poly Drive
Billings, MT 59102

For further information, contact Jim Wertman at 406-248-7455.

APPENDIX D

APPENDIX D: BIOLOGICAL INVENTORY DETERMINATION

This Appendix contains a copy of correspondence with the Albert Harting, a consulting Wildlife Biologist regarding biological resources in the Fort Harrison area. This correspondence was received on a prior EA at Fort Harrison that was completed in 1997, but is also applicable to this EA.

Note that at the bottom of the first page of the letter, Mr. Harting does state that his research included consultation with the U.S. Fish and Wildlife Service and the Montana Department of Fish, Wildlife and Parks.

Albert Harting
Consulting Wildlife Biologist
414 North Plum Avenue
Bozeman, Montana 59715

Phone/FAX: (406) 585-8120 E-Mail: harting@mcn.net

November 14, 1996

Major Steve Martinka
Army National Guard, Environmental Office
Department of Military Affairs
1100 N. Main
Helena, MT 59601

Dear Steve,

Enclosed is a copy of the material I received from the Montana Natural Heritage Program last May. After rereading the cover letter, I realized that taken alone, the letter may not provide sufficient detail for your purposes. Hence, I have provided below a review of the results of the database search as they are discussed in my final report for the Fort Harrison Biological Inventory.

- The search of the MNHP database covered an 8-mile radius centered on Fort Harrison (see map). The MNHP database consists of recent and historical records of species, communities, or other biological features of special interest. The sources of the data are varied, but most records are attributable to agency or university scientists. The database is generally regarded as the best available source for obtaining reliable information on sensitive species and habitats for a particular area.

- 9 "Element Occurrence Records" were identified in the database query for Fort Harrison, including 3 animal species records, 4 plant species records (3 of which were for the same species recorded in different locations) and 2 plant associations (plant communities of special interest).

- Only one of the above 9 Element Occurrence Records was from the immediate Fort Harrison area. This was for a Bluebunch Wheatgrass - Needle and Thread Grass plant association identified in 1972 north of the entrance road to the Fort. Consultation with the MNHP botanist (S. Cooper, pers. comm.) revealed that this plant association was no longer considered of special interest and its appearance in the data query was an artifact of outdated data (i.e., old records that need to be cleaned up and/or removed from the database).

Additional consultations with the U.S. Fish and Wildlife Service and the Montana Department of Fish, Wildlife and Parks verified that no other sensitive or listed species had been previously recorded in the Fort Harrison area.

Please don't hesitate to call me if you need any additional information or clarification.

Sincerely,

Albert Harting

APPENDIX E

APPENDIX E: TRAFFIC/PAVEMENT EVALUATION

This Appendix contains the Traffic Study that was prepared by Damschen & Associates to determine the impact of the new Armed Forces Reserve Center and related development on existing traffic and roadways.

The findings of the Study indicate that there will be no significant impact on either the traffic or pavement as a result of the projects contained in this EA.

D&A
DAMSCHEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1800 ELLIS STREET
BOZEMAN, MT 59715
TELEPHONE (406) 585-9140

TECHNICAL MEMORANDUM

August 6, 1997

To: Jim Wartmen, AIA, CTA Architects Engineers
From: John Pavsek, P.E., Damschen & Associates, Inc
Reviewed: Daniel McCauley, P.E., Damschen & Associates, Inc.
Subject: **Helena Armed Forces Reserve Center**
Environmental Assessment - Traffic/Pavement Evaluation

BACKGROUND

In accordance with CTA Architects Engineers June 27, 1997 letter Request for Proposal and Damschen & Associates, Inc. July 7, 1997 Professional Services Proposal (both documents incorporated by reference), this Technical Memorandum addresses traffic impacts associated with the proposed Helena Armed Forces Reserve Center facility on existing public roadways surrounding the project. The proposed Helena Armed Forces Reserve Center facility will accommodate approximately 200 employees; 150 employees living off site of Fort Harrison. This building will replace the existing Armed Forces Reserve Center located within the City of Helena. Note that for ease of reference, the existing Fort Harrison Army National Guard complex is herein referenced as the "Base" and the proposed Armed Forces Reserve Center is herein referenced as "AFRC".

Damschen & Associates, Inc., scope of services includes:

* Develop detailed scope of services; determine extent of project study area.
* Interview Fort Harrison, County and City staff.
* Obtain existing traffic count data.
* Perform detailed highway pavement analysis of local public streets.
* Prepare a map of the public road system and study area boundary.
* Prepare a Technical Memorandum reporting our findings and conclusions.

PROJECT CONTACTS AND CORRESPONDENCE

For the analysis of this project, the following personnel were interviewed:

Merlyn Miller/Jim Wartman, Project Managers - CTA Architects Engineers
Eric Griffin, Public Works Director - Lewis & Clark County
Travis White, Planning Department, Field Technical - Lewis & Clark County
Major Steve Martinka - Fort Harrison Army National Guard

REPORT GUIDELINES AND FORMAT

To satisfy the requirements for pavement analysis and traffic impact of the Environmental Assessment, we utilize the applicable sections of the Army National Guard NEPA Manual publication entitled "Format and Content for an ARNG EA", dated April, 1997. We supplement these guidelines with transportation and traffic related components found in other local governmental EA requirements. The Manual on Uniform Traffic Control Devices (MUTCD), 1988 edition is referenced with respect to traffic control devices on public highways. The American Association of State Highway and Transportation Officials (AASHTO) 1990 Geometric Design Policy is also referenced in this memorandum. Both Lewis & Clark County and the City of Helena utilize these documents as a matter of policy.

Following are the specific components addressed by this Technical Memorandum:

1. Project Study Area
2. Existing Area Traffic Circulation
3. Access to Arterials
4. Emergency Service Access
5. Existing Pavement Conditions
6. Traffic Generation from Proposed Facilities
7. Highway Capacity
8. Impacts to existing Structural Pavements
9. Impacts to Signalization, Signage and Pavement Delineation

At the conclusion of the memorandum, we summarize our findings and conclusions.

1. *PROJECT STUDY AREA*

In accordance with the attached map (Exhibit A), the proposed AFRC facility will access Birdseye Road approximately 2400 feet south of the intersection of Birdseye Road and Country Club Avenue. Based on our analysis of the current and proposed traffic circulation associated with this project (reference item #2 below), the project study area includes all of Williams Drive extending from State Highway 12 to Birdseye Road (entrance to the VA Medical and Regional Office Center), Joslyn Street extending from State Highway 12 to the start of Country Club Avenue,

Country Club Avenue extending from Joslyn Street to Birdseye Road, and Birdseye Road extending from Williams Street to just north of Barrett Drive. Note that Birdseye Road fronts the two existing main entrances and the proposed entrance to the future AFRC facility.

The described roads were chosen as they service as collector roads for the immediate area surrounding the Base. The study area purposely ends at Highway 12 as this is a four lane arterial highway and is capable of handling high traffic volumes. The study area limit on Birdseye Road at Barrett Drive was chosen as very few additional trips are expected to access north of this study area.

In 1993, the City of Helena updated their Transportation Plan to address current and projected conditions and recommended improvements. The Transportation Plan update designates the study area roads as Major or Minor Collector roads as follows: County Club Avenue and Birdseye Road (Country Club Avenue to Barrett Road) as Major Collectors; Birdseye Road (Williams to Country Club Avenue) and Williams Street as Minor Collectors. Head Drive was not classified in the update.

The study area roads were constructed between 20-30 years ago. Road construction consisted of double shot chip seals placed on compacted native and/or special borrow material.

2. *EXISTING AREA TRAFFIC CIRCULATION*

Based on discussions with Lewis & Clark County staff, Fort Harrison representatives, and our personal observations, approximately 85% of the vehicular traffic accessing to and from the Base uses Joslyn Drive and Country Club Avenue. Approximately 10% of the traffic to the Base utilizes Williams Road and Birdseye Road. The remainder of traffic (i.e., 5%) access off of Head Drive via Country Club Avenue and from Birdseye Road north-west of the Base.

The State, Lewis & Clark County and the City of Helena have conducted recent traffic counts for specific roads in the general vicinity of the project area. Following is a summary of the traffic volumes in average daily trips (ADT).

Traffic Count Location	ADT
Country Club Avenue-immediately west of Joslyn Drive	4259
Williams Street - immediately north of Highway 12	2440
Birdseye Road - between Williams Street and Country Club Avenue	340
Birdseye Road - between Country Club Avenue and Barrett Road	2660
Country Club Avenue - immediately east of Head Drive	2270
Birdseye Road - north of Barrett Road	1396

3. ACCESS TO ARTERIALS

The local roadways within the project study area and immediately adjacent to the Base are designated collector roads. These roads all function to provide both land access and a serve as a direct link to the arterials. The Army Nation Guard complex, including the proposed AFRC building, will have direct access to a primary arterial road (Highway 12) via Williams Street and Joslyn Drive.

4. EMERGENCY SERVICE ACCESS

Fire service for the AFRC facility will be provided by the Base Fire Department. Law enforcement, ambulance service, and paramedic service will generate from the City of Helena. Regarding fire service access, the currently proposed layout for AFRC site improvements only includes one direct access to the facility from Birdseye Road. Note that generally adopted emergency access policies require a second access to a facility of this size and type.

Although outside the scope of services for this environmental assessment, we strongly recommend constructing a second access to the site. The most viable alternative would be constructing a roadway from the Base roadway system north of the AFRC. Access from the VA Medical and Regional Office Center private drive and/or parking area is less desirable. In fact, concerns have been expressed by VA personnel that direct access to their private drives could generate additional thru traffic from Williams Road to the Base. Regardless of the alignment chosen, the secondary access should at minimum be a 12 feet wide all-weather gravel road. To provide two way traffic, a minimum 24 feet wide roadway is recommended. Note that his width does not allow for on-street parking.

Emergency services provided by law enforcement, paramedic, and ambulance vehicles are expected to access from the most direct route, ie, Joslyn Drive/Country Club Avenue. These are higher speed collector roads facilitate the quickest response time to existing entrances along Birdseye Road, including the proposed entrance to the AFRC facility. In the event either Joslyn Drive, Country Club Avenue or Birdseye Road (north of the AFRC) facility are inaccessible, emergency vehicles can access the AFRC from Williams Road and Birdseye Road (south of the AFRC).

5. EXISTING PAVEMENT CONDITIONS

A detailed pavement inventory was performed for all of the public roads within the study area. The pavement inventory utilizes a system of field surveying (windshield survey and detailed pavement inspection), and a ranking method coupled with a computer data-base program. The ranking method is similar to numerous other systems used by public agencies across the State and is tailored for the County road system adjacent to the Base. Attached Exhibit B is an example Asphalt Street Inventory Data Sheet used for this project.

A Pavement Condition Index (PCI) number was calculated for each section of roadway based on various criteria, i.e., cracking, raveling, rutting, rideability, etc. The higher the rating, the better the condition of the roadway (90 being the highest). The following graduated pavement rated scale was used to classify the recommended maintenance/improvements;

PCI	Recommended Improvement
85-90	No work required
65-84	Maintenance required
45-64	Resurface road with overlay
0-44	Reconstruct roadway

Maintenance and construction costs include engineering, administration, inspection, and construction contingency. Following are budgetary unit prices per square foot for the various maintenance/repair operations:

Recommended Improvements	Unit Cost
Chip and Seal	\$0.20/sf
Leveling Course Overlay (1"-2" thick)	\$0.75/sf
Structural Overlay (2"-3" thick)	\$1.00/sf

Note that maintenance/repair applications are intended to improve the existing paved roadways to an acceptable level of service. Characteristics of an acceptable roadway are: well drained surface, absence of ruts or potholes, even edges, adequate shoulders, skid resistant surface profile, structural integrity, and improved ridability.

Attached Exhibit C is a table summarizing the recommended improvements to the current road system. As shown, the total anticipated cost to improve the roadways to their “optimum” condition is approximately $776,000.

6. TRAFFIC GENERATION FROM PROPOSED FACILITIES

As identified herein, the proposed AFRC facility will be manned by approximately 150 employees currently located off Base. Approximately 50 employees who will man the AFRC are already located at the Base. Note that these 50 employees are currently using the study area collector roads to travel from the Base to the existing AFRC facility in Helena. The corresponding traffic generated by these employees are therefore deducted from future traffic counts accessing the proposed AFRC facility.

It is important to recognize that the AFRC facility will generate support service traffic (ie., UPS, Federal Express, administrative equipment, delivery trucks, etc.). These vehicles will be accessing the site during normal business hours, Monday through Friday. In addition to the normal weekly

usage, the AFRC facility and the future Naval Reserve facility will be manned by approximately 500 personnel called in for monthly weekend drill exercises. It is anticipated that these employees/reservists will arrive on Saturday mornings and leave Sunday evenings."

Computations to determine the future additional average daily vehicle trips are as follows. Note that round trips are factored into the subtotals:

Week Day Usage

150 vehicles (offsite personnel) = 300
Deduct 50 vehicle (onsite personnel) = (-100)
Assume half eat out for lunch (all personnel) = 200
10 delivery vehicles = 20
Assume 10% misc. trips (all personnel) = 40
Subtotal 460 trips

Monthly Reserve Exercise[1]

500 vehicles
Average ADT (1000 trips ÷ 21 days) = 48

Total Weekday ADT 508

Based on the projected usage, ADT's for the additional future traffic was computed for each of the study area roads. Note that a conservative assumption was made that each employee/reservist will be driving their own vehicle to and from the Base. Based on the previously described highway distribution percentages, following is a summary of the existing and projected trips:

Road/Location	Percent of Distribution	Projected Current ADT	Increased ADT	Future ADT
Country Club Ave. (Hwy 12 to Head Dr.)	85%	4259	432	4691
Williams St. (Hwy 12 to Birdseye Rd.)	10%	2440	51	2491
Birdseye Rd. (Williams St. to Country Club Ave.)	100%	340	508	848
Birdseye Rd. (Country Club Ave. to Barrett Rd).	3%	2660	15	2675

7. *HIGHWAY CAPACITY*

In order to compare traffic volume with the carrying capacity of the highways, the roads need to be classified by functional usage as Local, Collector or Arterial roads. The local roads main purpose is to provide direct access to private properties. Collector streets provide both direct property access and connect that access to major routes (i.e., arterials). Arterials are major streets that move traffic through a given area with little or no direct property access. The roads within the study area all function as either major or minor collectors in accordance with the 1993 Helena Transportation Plan Update.

Collectors serve a dual function: collecting traffic between local roads and arterial streets and providing access to abutting properties. Various factors contribute to the a roadways capacity and acceptable degrees of congestion. Factors include: sight distance, geometrics (vertical and horizontal), magnitude of highway access points, and highway factors such as lane widths and condition of the roadbed. In accordance with AASHTO Design Guildlines, two-way highway serving traffic in two directions generally have a capacity of 2,800 vehicles per hour in both directions. The highest volume road (projected) in the study area is Country Club Ave. (Hwy 12 to Head Dr. at 4,649 total vehicles per day) It is assumed that the peak hour traffic on this section of road will not exceed 2,800 trips. All of the study area roadways are therefore operating below their respective capacity.

8. *IMPACTS TO EXISTING STRUCTURAL PAVEMENTS*

In accordance with the pavement evaluation and rating, all of the public roads are in need of some form of maintenance or repair to bring them to an optimum condition. Most of these roads were built between 20-30 years ago and have surpassed their anticipated life expectancy. The fact the roads have held up is possibly due to the low traffic volume during the early life of the pavements.

Country Club Avenue, Williams Street and Birdseye Road (north of Country Club Avenue) are currently operating at moderate volumes. The overall projected traffic volume increase on these roads is minimal and should not result in any measurable increase in the rate of pavement deterioration.

Birdseye Road between Williams Street and Country Club Avenue will increase in volume once the AFRC facility is functional. However, the total projected volume of 858 ADT is well below the anticipated carrying capacity of the roadway.

9. *IMPACTS TO SIGNALIZATION, SIGNAGE AND PAVEMENT DELINEATION*

A review of the traffic signage on the study area roads indicate that adequate advance warning, warning and regulatory signs have been installed by the County. In accordance with the MUTCD, the current signage is considered adequate to facilitate future traffic circulation to the AFRC facility.

FINDINGS AND CONCLUSIONS

- All of the study area roads are under the jurisdiction of Lewis and Clark County. The County is currently considering measures to secure funding for future maintenance and/or repairs.
- According to the Pavement Evaluation, the existing study area public highways are in fair to poor condition in regards to their structural sections. Most notably, the anticipated highest use roadway, Country Club Avenue, is currently in need of a structural overlay to correct deteriorated pavement, rutting, ride quality and smooth pavement. Birdseye Road between Williams Street to Country Club Avenue is in fair condition. This section has been recommended for chip and seal resurfacing. Likewise, Williams Street from US 12 to Birdseye Road is in fair condition and recommended for chip and seal resurfacing.
- Projected traffic volumes from the proposed AFRC facility are relatively low in relation to the design carrying capacity of the local County highways. The additional traffic alone is not expected to significantly impact the pavement structural sections in the short term.
- The existing site plan only includes one direct emergency vehicle access to the proposed AFRC facility. A second access is recommended, preferably from the existing Base roadways located to the north.
- Adequate public highway circulation exists to provide primary and secondary emergency service access to the entrance to the proposed facility.
- Existing Regulatory signage and speed limits appear adequate in relation to the existing and proposed future use of the study area public highway system.

1.
In order to draw a direct comparison between the once a month weekend military exercise and the normal AFRC weekday ADT, the military exercise total traffic volume of 1000 trips is spread over the entire month (assume 4.3 weeks per month multiplied by 5 days per week).

EXHIBIT A

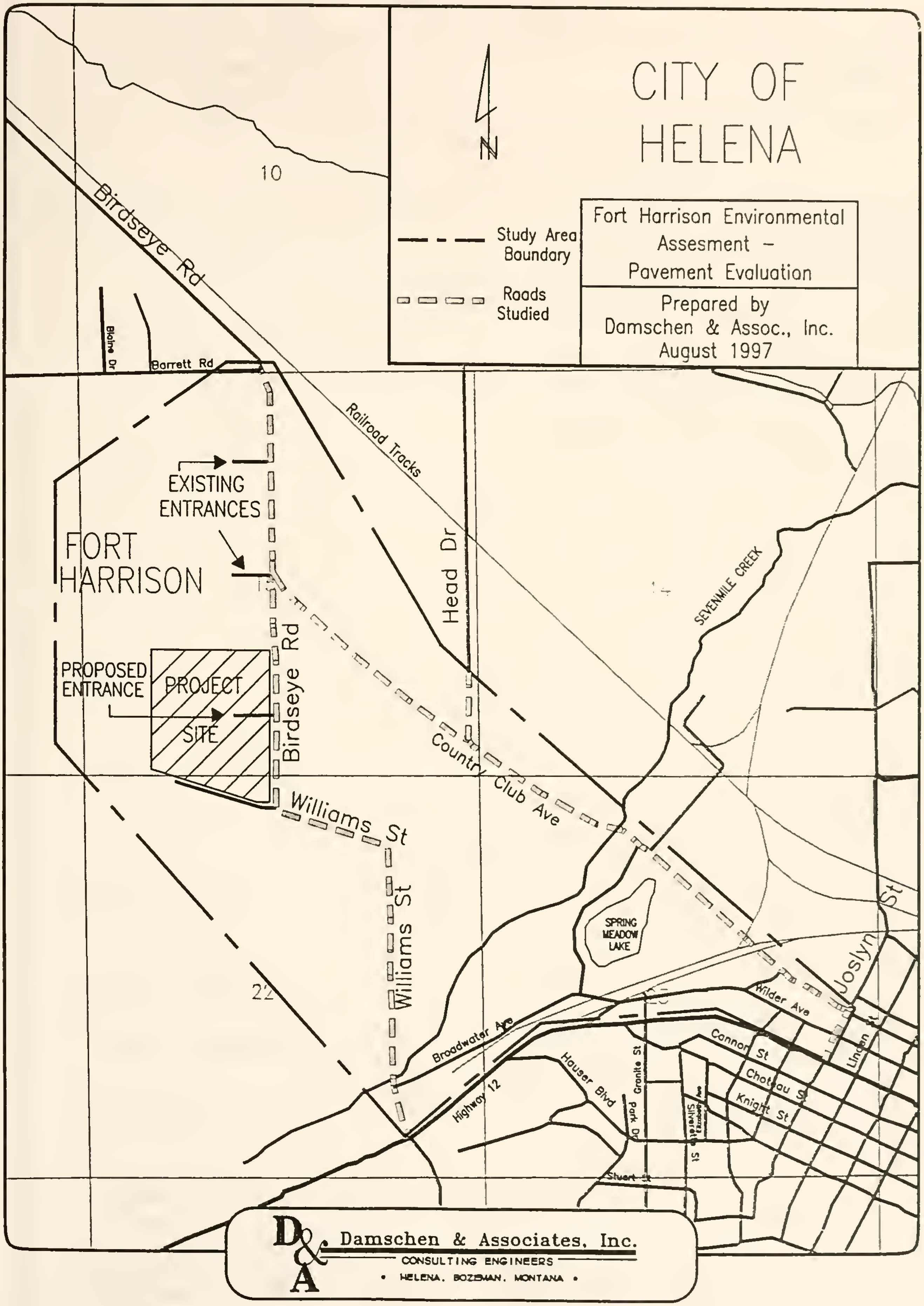

CITY OF HELENA
N
Study Area Boundary
Roads Studied
Fort Harrison Environmental Assesment – Pavement Evaluation
Prepared by Damschen & Assoc., Inc. August 1997
10
Birdseye Rd
Blaine Dr
Barrett Rd
Railroad Tracks
EXISTING ENTRANCES
FORT HARRISON
PROPOSED ENTRANCE
PROJECT SITE
Birdseye Rd
Head Dr
Country Club Ave
SEVENMILE CREEK
Williams St
Williams St
22
SPRING MEADOW LAKE
Joslyn St
Wilder Ave
Broadwater Ave
Highway 12
Hauser Blvd
Granite St
Park Dr
Silverette St
Cannon St
Choteau St
Knight St
Linden St
Stuart St
D&A Damschen & Associates, Inc.
CONSULTING ENGINEERS
• HELENA, BOZEMAN, MONTANA •

EXHIBIT B

LEWIS AND CLARK COUNTY

ASPHALT STREET INVENTORY DATA

Street Name *WILLIAMS ST*

Start *HWY 12 (MILE 0.0)*

Stop *TERRACE DR (MILE 0.3)*

Block Number *1*

Length *1600'*

Width *24'*

Date *4-28-97*

By: *JP*

PCI *68*

FUNCTIONAL CLASSIFICATION *M/C*

Defect		Degree	Area % Affected 0-25% area	25-50% area	50% area	Score
TRANSVERSE CRACKS	Barely Visible	Slight	1	2	[✓ 3]	3
	Thickness < .25" Not Separated	Moderate	2	3	4	
	Thickness > .25" Separated	Severe	3	4	5	
LONGITUDINAL CRACKS	Barely Visible	Slight	[✓ 1]	2	3	1
	Thickness < .25" Not Separated	Moderate	2	3	4	
	Thickness > .25" Separated	Severe	3	4	5	
ALLIGATOR CRACKS	Barely Visible	Slight	2	4	6	—
	Not Separated	Moderate	4	6	8	
	Separated	Severe	6	8	10	
SHRINKAGE CRACKS	Barely Visible	Slight	1	2	3	—
	Thickness .25" Not Separated	Moderate	2	3	4	
	Thickness > .25" Separated	Severe	3	4	5	
RUTTING	Depression < .5"	Slight	2	4	6	4
	> .5" Depression < 1.5"	Moderate	[✓ 4]	6	8	
	Steering Difficult	Severe	6	8	10	
CORRUGATIONS	Visible	Slight	1	2	3	—
	Bumpy Ride	Moderate	2	3	4	
	Speed Reduction	Severe	3	4	5	
RAVELING	Few Loose Aggregate Visible	Slight	1	2	3	—
	Loose Aggregate Visible In Wide Area	Moderate	2	3	4	
	Surface Noticeably Rough	Severe	3	4	5	
SHOVING OR PUSHING	Barely Visible	Slight	2	4	6	—
	Localized at Intersections	Moderate	4	6	8	
	Affecting Entire Lane	Severe	6	8	10	
POT HOLES	Patch Level No Deterioration	Slight	2	4	6	—
	Patch Defect Some Deterioration	Moderate	4	6	8	
	No Patch, Patch Destroyed	Severe	6	8	10	
EXCESS ASPHALT	Barely Visible	Slight	2	4	6	4
	Noticeable	Moderate	[✓ 4]	6	8	
	Total Flush	Severe	6	8	10	
POLISHED AGGREGATE	Barely Visible	Slight	1	[✓ 2]	3	2
	Noticeable	Moderate	2	3	4	
	Skid Hazard	Severe	3	4	5	
~~DEFICIENT DRAINAGE~~ N/A	Standing Water <.5/curbing present	Slight	2	4	6	—
	Standing Water .5 to 1" / some curbing present	Moderate	4	6	8	
	Standing Water >1" / No Curbing Present	Severe	6	8	10	
RIDE QUALITY	Few Bumps	Slight	2	4	6	8
	Rough Ride	Moderate	4	6	[✓ 8]	
	Speed Reduction	Severe	6	8	10	

MAINTENANCE WORK DONE	DATE
Crack Seal	
CRF	
Chip & Seal	
Overlay	
Reconstruction	

Curb Present ☑ None ☐ 50% ☐ all

S/W Present ☑ None ☐ 50% ☐ all

Total Score *22*

PCI = ~~100~~ *90* - Total Score *68*

Remarks *OLD DOUBLE SHOT CHIP & SEAL PAVEMENT*

EXHIBIT C
FORT HARRISON PUBLIC STREET IMPROVEMENTS
CURRENT RECOMMENDED IMPROVEMENTS

STREET NAME	START LOCATION (MILE)	STOP LOCATION (MILE)	SECTION #	LENGTH (FT)	WIDTH (FT)	AREA (FT2)	FUNC. CLASS.[1]	PCI[2]	ADT[3]	RECOMM IMPROV.[4]	EST. COST ($1000)[5]
Birdseye Rd.	Williams St. (0.0)	Ctry. Club Ave. (0.6)	1	3,200	24	76,800	MIC	69	-	C/S	$15
Birdseye Rd.	Ctry. Club Rd. (0.6)	Barrett Rd. (1.1)	2	2,600	24	62,400	MAC	63	1,200	SOL	$62
Birdseye Rd.	Barrett Rd. (1.1)	RR Tracks (3.0)	3	10,000	24	240,000	MAC	53	1,400	LOL	$180
Country Club	Joslyn Street (0.0)	Birdseye Rd. (1.85)	1	9,700	24	232,800	MAC	64	3,200	SOL	$233
Head Dr.[6]	Country Club Ave. (0.0)	Franklin Mine Rd. (1.9)	1	10,000	26	260,000	NC	-	-	SOL	$260
Williams St.	US 12 (0.0)	Terrace (0.3)	1	1,600	24	38,400	MIC	68	-	C/S	$8
Williams St.	Terrace (0.3)	Birdseye Rd. (1.0)	2	3,700	24	88,800	MIC	82	-	C/S	$18
Total											$776

Footnotes:

(1) Functional Classification (1993 Helena Transportation Plan Update):
MAC = Major Collector
MIC = Minor Collector
NC = Not Classified

(2) Pavement Condition Index:
85 - 90 = No Work
65 -84 = Maintenance Required
45 - 64 = Resurface Road with Overlay
0 - 44 = Reconstruction Required

(3) Average Daily Vehicle Trips from 1993 Helena Transportation Plan Update

(4) Recommended Improvements:
C/S = Chip and Seal
LOL = Leveling Course Overlay (1"-2")
SOL = Structural Overlay (2" - 3")

(5) Based on the following unit prices (per square foot):
C/S = $0.20
LOL = $0.75
SOL = $1.00
Unit prices include construction, 15% engineering and 10% construction contingency

(6) Current gravel road; construct 2" - 3" AC surface